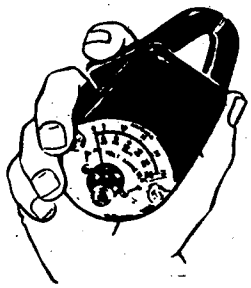
Pt. No. 980751 Manual AAO-4

operating instructions

AMPROBE® JR.

MODEL Y AND YT
Volt-Amp Tester

MODEL YO AND YTO
Volt-Amp-Ohm Tester



See PRECAUTIONS FOR PERSONAL AND INSTRUMENT SAFETY on page 2.

See LIMITED WARRANTY on page 3.

Patent Nos. #2663,845 #D160,179, others pending

AMPROBE INSTRUMENT

PRECAUTIONS FOR PERSONAL AND INSTRUMENT SAFETY

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 and clothing should be worn.
3. Before connecting or disconnecting the voltmeter to or from the circuit to be tested, turn off all power to the circuit.
4. Before applying test leads to circuit under test, make certain:
   a. Proper test leads are plugged into correct instrument jacks, and
   b. Selector switch is set to proper range.
5. Before using any electrical instrument or tester for actual testing, the unit should be checked on a known live line to make certain it is operating properly.
6. Make certain no voltage is present in circuit, before connecting ohmmeter to circuit.
7. The jaws of clamp-on instruments should not, under any circumstances, be used as a device to hold or hang the instrument. When using the instrument as a voltmeter or ohmmeter, *never* clamp the jaws around or on to a conductor, box or anything else - conducting or non-conducting. For easier and faster voltage and resistance tests, we recommend Extendo Leads, available from your AMPROBE distributor.
8. When measuring voltage or current with models that have an ohmmeter, remove the ohmmeter battery fuse attachment from the instrument or incorrect voltage or current readings will be obtained. Use the ohmmeter battery/fuse attachment only when taking resistance measurements.

VOLTAGE AND CURRENT MEASUREMENTS SHOULD NOT BE MADE SIMULTANEOUSLY.

NOTE: AMPROBE JR. IS DESIGNED FOR USE WITH AMPROBE JR. VOLTAGE TEST LEADS ONLY. DO NOT USE OTHER TYPES.

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 the 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 of the U.S.A. the local Amprobe representative will assist you.

Above limited warranty covers repairs and replacement of instrument only and no other obligation is stated or implied.

SPECIFICATIONS

Frequency: 60 Hz
Accuracy: within ±3% of full scale*
Case Voltage Breakdown Test: 3000 Volts AC
Conductor Capacity: 1/2"
Weight: 11 oz.
Body Dimensions: 2½" wide, 4¾" long, 1⅜" thick.
Scale Length: 1.8 inches
Battery (YO, YTO Models): EVEREADY #912 or equal
Fuse: #8AG-361, 1 amp fast blow

**Based on sinusoidal waveform.*

How to Operate the Amprobe Jr. for CURRENT READINGS

See PRECAUTIONS FOR PERSONAL AND INSTRUMENT SAFETY on page 2.

(ampere range on black arc)

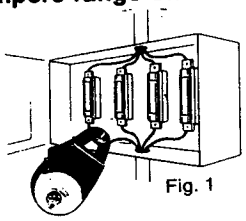


Fig. 1

1. Check zero. See page 5.
2. Press trigger to open the transformer jaws.
3. **Encircle one conductor** and remove finger pressure to snap-close the transformer jaws.

   Note: Reading will not be obtained if jaws are snapped over two conductors.

4. Read amperes on **black arc** as indicated by the pointer.
5. Press black button just below trigger for low ampere range on YT and YTO models. See page 5.

How to Operate the Amprobe Jr. for VOLTAGE READINGS ALL MODELS

See PRECAUTIONS FOR PERSONAL AND INSTRUMENT SAFETY on page 2.

(voltage ranges on red arc)

Voltage Ranges depend upon model

Also, see page 12.

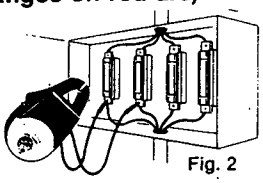


Fig. 2

ZERO ADJUSTMENT

For greatest accuracy, the pointer should be set exactly on the zero line. This is done with zero adjust screw.

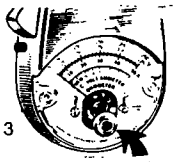


Fig. 3

1. Plug voltage test leads into voltage receptacles marked "VOLTS" on the back of the Amprobe Jr. Instrument is now ready to read on the **HIGH VOLTAGE RANGE.**
2. Touch one side of the line with one prod and the other side with other prod. Read **VOLTS** on **RED ARC** as indicated by pointer on the high voltage scale.
3. If reading is within the low voltage range, press small black button just below trigger and read on the low voltage scale.

Press Black Button for Low Range

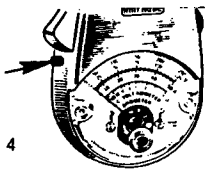


Fig. 4

How to use the Amprobe Jr. YO & YTO Models as an **OHMMETER**

The ohmmeter scale is on the lower arc. The zero ohms is at the right end while the infinity mark ∞ is at the left end.


Fig. 5


Fig. 6

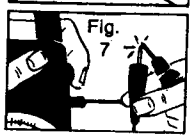


Fig. 7

Oxidation on base of battery can cause poor contact. Sand lightly to assure good contact.

1. Check zero. See page 5.
2. Insert one of the yellow leads into right hand voltage receptacle on back of instrument case as indicated by arrow. See fig. 5.
3. Plug the ohmmeter battery/fuse attachment lead into right side of the instrument just below the black, ohmmeter zero adjust knob. See fig. 6. Install fuse and battery. See instructions below.
4. Touch probe tips together. Pointer will deflect. Line up pointer with "O" mark on ohmmeter scale by turning black, ohmmeter zero adjust knob on right side of instrument. See fig. 7.

Note: If ohmmeter adjustment does not allow pointer to get up to zero **ohm** line (maximum reading), replace battery. If pointer does not deflect at all, check fuse and battery.

HOW TO REPLACE FUSE AND BATTERY

Unscrew base of ohmmeter battery/fuse attachment. Insert fuse (Use Littelfuse Type 8AG-361, 1 AMP fast blow) and AAA battery (Cat. No. 912, not supplied) into probe end as shown in figure. Screw base on to probe. The ohmmeter is fused to help protect it against a misapplication of voltage, but under certain conditions it is still possible to damage the meter and/or to obtain incorrect readings.

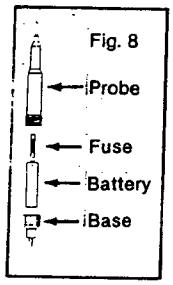


Fig. 8

Ways to use Amprobe Jr. as a VOLTMETER-AMMETER-CONTINUITY TESTER

MEASURING LOAD CURRENT

Snap AMPROBE Jr. transformer jaws around one of the lines feeding the equipment. Load current should be within 10% of nameplate rating.

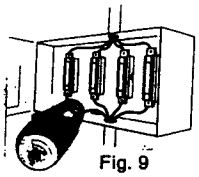


Fig. 9

CHECKING LOAD BALANCE ON THREE-PHASE AND THREE WIRE SINGLE PHASE CIRCUITS

Snap AMPROBE Jr. around each line and read current. A balanced load will show no more than a 10% to 20% difference between the three phases. On a three wire single phase system the current measured in the two "hot" legs should also be within 10% to 20% of each other.

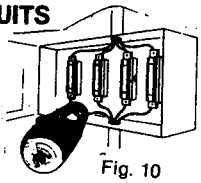


Fig. 10

MEASURING LINE VOLTAGE

For faster and easier testing, we recommend the use of Extendo Leads. See page 12.

Plug test leads into receptacles on back of instrument. Touch one side of the line with red test prod and touch the other side of the line with black test prod. The voltage should be checked at the closest convenient point to the equipment and should be within 10% of the nameplate rating.

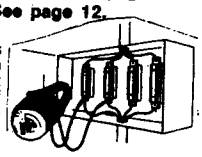


Fig. 11

TESTING A MOTOR FOR GROUNDS

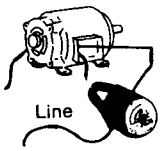


Fig. 12

To determine whether a winding is grounded or has a very low value of insulation resistance, connect the AMPROBE Jr. and test leads as shown in adjacent figures. If the winding is grounded to the frame, the AMPROBE Jr. will indicate full line voltage. In the case of a high resistance ground, which is simply a low insulation resistance, the indicated reading will be a little less than the line voltage. A winding which is not grounded will be shown by a small or negligible reading which will be due in most part to the capacitance effect between the winding and the steel laminations.

TESTING A MOTOR FOR GROUNDS WITH YO OR YTO MODEL


Fig. 13

Connect leads to instrument as directed for use as ohmmeter. Apply test leads between motor leads and motor frame for resistance indication on ohmmeter scale. Should be ∞ .

Any steady deflection from that point indicates a short or low value of insulation resistance. See fig. 13.

TESTING FOR SHORTS WITH YO OR YTO MODEL

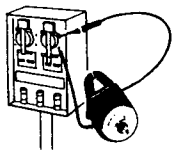


Fig. 14

With test leads connected to instrument as an ohmmeter, apply test leads to circuit terminals. (Caution—make certain that the circuit is disconnected from the line before taking any resistance measurements.)

If the pointer indicates a resistance value which is more than ten percent lower than its specified value, the circuit may be shorted.

FUSE CHECKING WITH AMPROBE Jr.

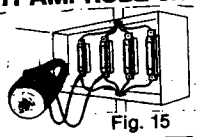


Fig. 15

To test fuses measure the voltage between the load side of one fuse to the line side of the next fuse. If the AMPROBE Jr. does not indicate full line voltage, the load side fuse is bad.

TESTING ELECTROLYTIC CAPACITORS

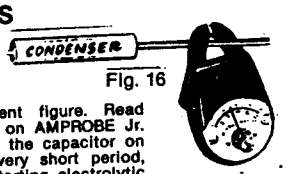


Fig. 16

To measure the capacity of a capacitor, set circuit up as shown in adjacent figure. Read capacitor current on AMPROBE Jr. During test, keep the capacitor on line for only a very short period, because motor starting electrolytic capacitors are rated for intermittent duty. The capacity in microfarads is then computed by substituting the line voltage and current in the following formula, assuming that a 60 cycle line was used:

$$\text{Microfarads} = \frac{2650 \times \text{Amperes}}{\text{Line Volts}}$$

An open capacitor will exist if there is no current indication in the above test. A shorted capacitor will blow the fuse when the line switch is turned on to measure the line voltage.

All types of capacitors can be checked using the ohmmeter. Touch ohmmeter test leads to capacitor leads; if pointer deflects and returns to ∞ resistance, capacitor is good. Reverse connections. Pointer should deflect even more and return to ∞ resistance. If no deflection, capacitor is open. If pointer does not return to ∞ resistance, capacitor is defective.

TESTING FOR OPENS WITH Y MODELS

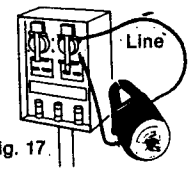


Fig. 17

To determine whether a circuit is open, connect test leads and AMPROBE Jr. as shown in adjacent figure. If the winding is open there will be no voltage indication. If the circuit is not open the volt-meter will indicate voltage.

TESTING FOR OPENS WITH YTO AND YO MODELS

With leads connected to instrument as an ohmmeter, apply leads to circuit terminals. (Caution — make certain that the circuit is disconnected from line before taking any resistance measurements.) If pointer remains at infinity mark ∞ the circuit is open.

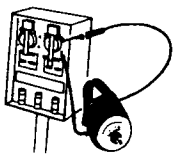


Fig. 18

FINDING GROUNDED SIDE OF LINE

Touch one test prod to ground such as conduit, receptacle box, etc. and touch each side of the line with other test prod. The one that produces a voltage indication is the "hot" side and the one with no voltage indication is the grounded side of the line.

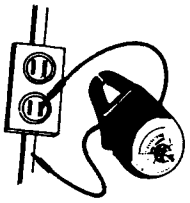


Fig. 19

TESTING CENTRIFUGAL SWITCH IN A SPLIT PHASE MOTOR

The Centrifugal Switch disconnects the starting winding from the line when the motor approaches full speed. An indication of current at full speed on the AMPROBE Jr. when snapped around one of the starting winding leads means a faulty centrifugal switch.

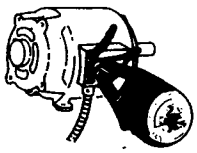
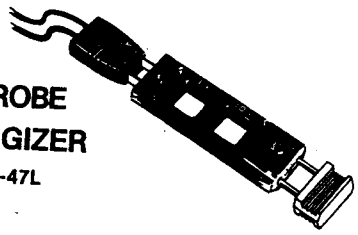
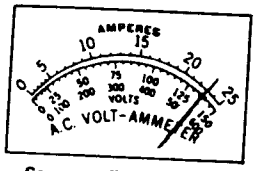


Fig. 20

AMPROBE ENERGIZER

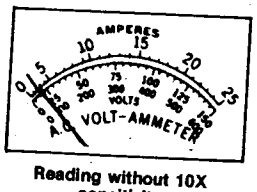
Model A-47L





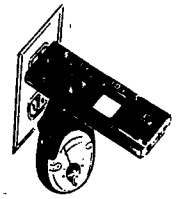
Multiplies the sensitivity of AMPROBE Models by 10X for precise readings on small appliances and fractional HP motors. Model Y525 becomes 2.5 amps full scale.

Same reading with 10X sensitivity
(Divide by 10 to get reading—2.3 amps)



Reading without 10X sensitivity

FOR DIRECT READING



By plugging appliance into Direct Reading receptacles (no increase in sensitivity,) you can "split" double-conductor line cords for a quick reading at the outlet. Capacity 15 amps continuous, 16-20 amps, 1 minute.

FOR VOLTAGE READING

The Energizer has receptacles for measuring line voltage at the outlet—under actual load conditions, while the appliance is connected to the line.

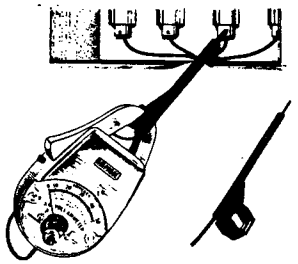
ACCESSORIES
FOR AMPROBE JR. MODELS

ALL WEATHER EXTENDO LEADS– MODEL VLK-455R

Eliminates the need for a "third hand" when taking voltage and resistance measurements.

EXTENDO LEADS FOR FASTER AND EASIER VOLTAGE TESTING

EXTENDO TEST LEADS have 5 inch long, insulated probes for a man-sized grip. One probe clamps between instrument jaws. Optional alligator clip adaptor (Cat. No. VRC-320) converts probe so it can be fastened to test point. Probe tips are replaceable (Cat. No. VPT). Extendo Lead Cat. No. VLK-455R.



MODEL B CARRYING CASE

The handiest, most convenient way to carry an AMPROBE Jr. Holds Extendo Leads VLK-455R and AMPROBE Energizer A-47L. Instrument and accessories tuck neatly away in their own compartments.

B Case (closed)

B Case (open)