LOW BATTERY INDICATION
Replace the battery when the decimal point at the left end of the
ACD-1/2 digital display comes on (See Fig. 5) or "BT" appears
in the ACD-3/4 display (Fig. 6) or the display digits do not light up.

ACD-1/2
Low Battery Indication

ACD-3/4
Low Battery Indication

Figure 5

Figure 6

OVER-RANGE INDICATION
If you attempt to measure a voltage, current or resistance
greater than the instrument's capability, the instrument will signal
over-ranging as follows:

ACD-1/ACD-2:
a) With C/P Selector Switch in "P" (Peak) position, the two
right-hand decimals will light up and remain on; balance of
display will be dark.
b) With C/P Selector Switch in "C" (Continuous) position, the
two right-hand decimals will light up and remain on and the
three digits will flash on and off.

Immediately remove instrument from the circuit.

ACD-3/ACD-4:
Flashing digits

HOW TO MEASURE RESISTANCE
See Precautions for Personal and Instrument Safety.

(Ohmmeter Test Voltage ACD-1/2 1.2V Max; 6 ma low range.
0.6 ma high range; ACD-3/4 1.7V Max.)

CAUTION: Make certain no voltage is present in circuit before
connecting ohm meter to circuit. If ohm meter is ap-
plicated to line, the ohm meter fuse may blow or incorrect
readings may be obtained. Also make certain any capacitors
in circuit are discharged.

1) Insert one insulated voltage test lead connector into the right
hand voltage receptacle (viewing instrument from front) in
the bottom of the instrument. Looking at the back of the in-
strument, this voltage receptacle is marked "COM." (See Fig
4).
2) Clamp voltage test lead probe between jaws (See Fig. 7).
3) Plug ohm meter lead into jack on the right side of the instru-
ment. (See Fig. 1).
4) Position C/P Selector Switch in the "C" position.
5) Short ohm meter test probe tip to voltage test lead probe
tip and press the "Press-to-Read" button.
a) If fuse is good, reading should be below one ohm
b) If fuse is blown, the two right-hand decimal points
will light up and remain on and the three digits will flash on
and off.

6) With instrument in one hand and ohm meter test probe in the
other hand, apply probe tips to circuit or device. Press the
"Press-to-Read" button and read the display. NOTE: When
measuring low resistances, subtract the resistance value ob-
tained in (5)a above from the reading obtained in the actual
test. Instrument measures its own lead resistance at the
same time it measures circuit or device resistance. Subtract-
ing the test lead resistance gives a more accurate
resistance measurement. Also, make certain good electrical
contact is made with test points. Because of the sensitivity
of the instrument, even slight corrosion on probe tips or test
points may cause erroneous readings. To clean probe tips,
use fine steel wool.

HOW TO MEASURE AC CURRENT
See Precautions for Personal and Instrument Safety.

1) Disconnect voltage test leads and ohm meter test lead from
instrument.
2) Position the C/P Selector Switch (See Continuous or Peak
Operation).
3) Press trigger to open transformer jaws.
4) Encircle single conductor with jaws.
5) Release trigger pressure on trigger and allow jaws to close
around the conductor.
6) Press the "Press-to-Read" button and read the display.

Replaceable probe tips
Cat. No. VPT

HOW TO MEASURE AC VOLTAGE
See Precautions for Personal and Instrument Safety.

NOTE: Because the ACD-1/2/3/4 is a high
impedance voltmeter (10 Megohms),
and RF signals exist almost every-
where, it is possible to get a voltage
reading even when the instrument is
not connected to a circuit. This will
not, however, affect your actual
circuit measurements.

OPERATING INSTRUCTIONS
AMPROBE®
Digital Clamp-on Volt/Amp/Ohm meter
Models ACD-1, ACD-2, ACD-3
and ACD-4

Specifications
Ranges: ACD-1 and ACD-3 0.1-99.9/999
ACD-2 and ACD-4 0.1-99.9/999

Votls* AC, Amps AC, ohms
Votls* DC, Amps DC Peak
0.1-300 Amps AC Continuous
*Input Impedance 10 megohms

Accuracy: Models ACD1 & 2
Amps ± 2% of reading ± 1 LSD*
Based on sinuoidal
wavesforms from 25-400 Hz.

Votls ± 2% of reading ± 1 LSD*
Based on sinuoidal
wavesforms from 25-400 Hz.

Ohms ± 2% of reading ± 1 LSD*
Models ACD3 & 4
Amps ± 2% of reading ± 2 LSD*
Based on sinuosoidal
wavesforms from 40-400 Hz.

Votls ± 2% of reading ± 1 LSD*
Ohms ± 2% of reading ± 1 LSD*

Power: 1 No. MN1604, 9V Alkaline
Battery (not supplied)
Fuse: 1 No. 6AG-361, 1 Amp Fast Blow Supplied

Operating Temperature and Humidity:
+32°F to 120°F; 0°C to 49°C
ACD-1/2 Up to 95% RH; ACD-3/4 Up to 80%RH

Over-Range Protection: 50% overload for a max-
imum of one minute when measuring voltage or
current. Ohm meter is fused. ACD-3/4 are circuit
protected up to 600 volts.

Case Voltage Breakdown Test: 3000 volts AC

DIVISION OF CORE INDUSTRIES INC., LYNBROOK, NEW YORK 11563
LIMITED WARRANTY

Congratulations. You are now the owner of an AMPROBE® instrument. It has been union 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 the seal is unbroken or in the opinion of the factory the instrument has not been opened, 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 (located on back of instrument).

For your protection, please use the instrument as soon as possible. If damaged, or should the need arrive 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, 635 Merrick Rd., (use for U.P.S.), P.O. Box 329, (use for P.P.), Lynbrook, New York 11563 U.S.A. Outside of U.S.A., your AMPROBE representative will assist you.

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

PRECAUTIONS FOR PERSONAL AND INSTRUMENT PROTECTION

IMPORTANT:
1. 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.
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. The jaws of clamp-on instruments should not be under any circumstances, be used as a device to hold the instrument when taking other than a current reading. When using a clamp-on as a voltmeter or ohmmeter never clamp the jaws around or onto a conductor, box or anything else—conducting or non-conducting—except a test lead. (See Fig. 7).
4. Before applying test leads to circuit under test, make certain that test leads are plugged into proper instrument jacks.
5. Make certain no voltage is present in circuit, before connecting ohmmeter to circuit.
6. Should the instrument accidentally be used to try to measure a voltage or current beyond the range of the instrument, immediately remove the instrument from the circuit. See Over-Range Indication.
7. When not in use, keep instrument in its carrying case.
8. When instrument will not be used for a period of time, remove the battery from instrument.

ACCURACY

The accuracy is ±2% of reading ± one Least Significant Digit (LSD) based on sinusoidal waveform.

Example 1: Instrument reading is 850 amperes. ±2% equals ±1.7 amperes or 838 to 862. Taking ±1 LSD into consideration, actual current is between 832 (833 - 1) and 868 (867 + 1).

Example 2: Instrument reading is 20.0 amperes. ±2% equals ±0.4 taking ±1 LSD into consideration, actual current value is between 19.5 (19.6 - 0.1) and 20.5 (20.4 + 0.1).

PRESS-TO-READ SWITCH

To take a reading once the instrument has been connected as per the following instructions, push in on the Press-to-Read button. See Fig. 1.

To "lock" the button "On" for a constant readout, gently push in on the Press-to-Read button and while depressed turn it counterclockwise 1/8 turn. See Fig. 2.

CONTINUOUS OR PEAK OPERATION

The ACD-1/2/3/4 can be used to continuously monitor a fluctuating variable (current, voltage, resistance) to measure the peak (surgue) value of a variable, such as a motor starting current. Peak must last at least 0.08 seconds. Motor starting currents normally persist for approximately 0.17 seconds.

The Peak Mode can also be used to take and lock in a measurement when the display cannot be read because of instrument position. Lock "On" the Press-to-Read button. Connect instrument for the measurement (volts, amps, ohms). Remove instrument to a position where it can be read. Unlock Press-to-Read button. Note: in the "Peak" mode the ACD-3/ACD-4 lose one least significant digit every 15 seconds.

For continuous operation, move the C/P Select Switch to the left into the "C" position. For peak measurements, move C/P Select Switch to the right into the "P" position. See Fig. 3.

IMPORTANT: When changing C/P Select Switch position, release "Press-to-Read" button before switching.

INSTALLING BATTERY AND FUSE

The ACD-1/2/3/4 uses one No. MN1604 9V Alkaline Battery.

To install:
1) loosen screw located toward the bottom on the back of the instrument. (See Fig. 4)
2) lift battery compartment cover.
3) firmly snap connector onto battery terminals.
4) replace cover and tighten screw.

The instrument uses one No. 8AG-361, 1 Amp Fast Blow Fuse which installs in the probe handle of the OHM-4 Ohmmeter Battery Attatchment. To install:
1) uncrew the top (probe tip) section from the bottom section of the probe handle.
2) insert fuse into tip section.
3) screw two sections together.