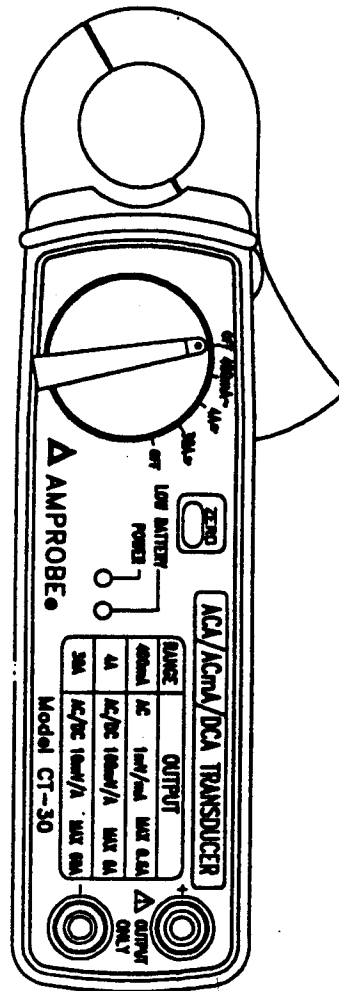


ACA/ACmA/DCA CURRENT TRANSDUCER

Model CT-30

USERS MANUAL



Limited Warranty

Congratulations! You are now the owner of an AMPROBE Instrument. It has been crafted according to the highest standards of quality 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 manufacturer number.

For your protection, please use the instrument as soon as possible. If damaged, or should the need arise to return your instrument, place it in a shipping carton packed with sufficient cushioning material. It must be securely wrapped, Amprobe is not responsible for damage during transit. Be sure to include a packing slip (indicating model and manufacturer number) along with a brief description of the problem. Make certain your name and address appears on the box as well as packing slip.

Ship prepaid via Air Parcel Post insured or U.P.S. insured where available to:

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

Outside the USA the local Amprobe representative will assist you. Above limited warranty covers repair and replacement of instrument only and no other obligation is stated or implied.

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FEATURES

1. Accurate DC/AC current measurement.
2. 1mADC resolution on 4A DC range.
3. 0.1mAAC resolution on 400mA AC range
4. One touch zero for DCA adjustment.
5. Small jaw for tight spaces.



IEC 1010-2-032
Cat. II 600V, Cat. III 300V
Pollution Deg. 2



Caution: Refer to Accompanying Documents



Caution: Risk of Electric Shock



Double Insulation

PANEL DESCRIPTION

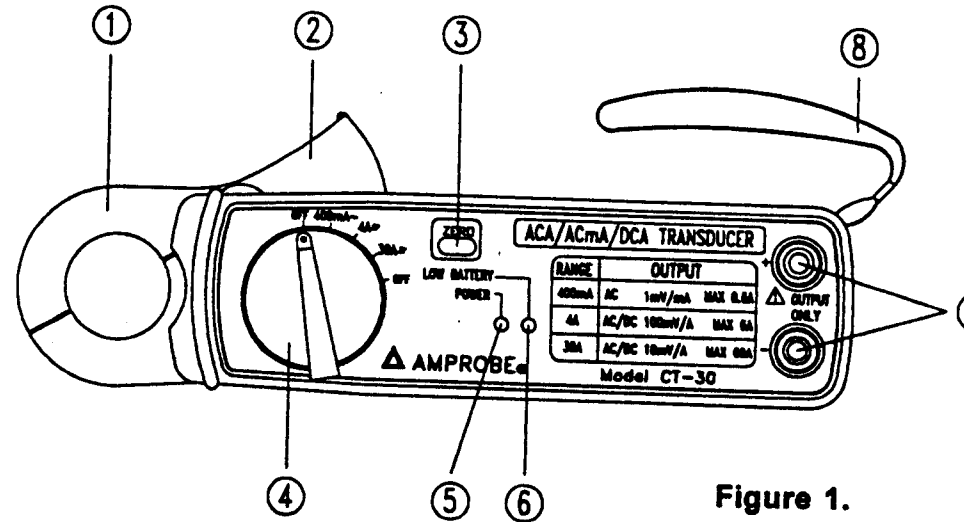


Figure 1.

1. **Transformer Jaw**
To measure DC/AC current, enclose the conductor by the jaw.
2. **Transformer Trigger**
Push the trigger to open the jaw.
3. **Zero Button**
Push the zero button to zero the output voltage before measuring current.
4. **On/Off and Range Selection Switch**
Turn the rotary switch to select the desired range.
5. **Power-on LED**
When the unit is turned on, this LED will be lit.
6. **Low Battery LED**
When the battery voltage is lower than the required voltage, this LED be lit while the power-on LED will be off.
7. **Output Terminals**
The output voltage is proportional to the current measured. Black terminal is the signal ground while red terminal is the signal. Do not input any voltage to these terminals.
8. **Hand Strap**
Put your hand through the hole of the hand strap to avoid accidental of the clamp meter.

Precautions for Personal and Instrument Protection

1. Read these instructions thoroughly and follow them carefully. Failure to follow these instructions and the precautions may result in personal injury and/or damage to the instrument and/or accessories. Amprobe and its representatives shall not be responsible or liable with regard to safety, or misapplication of this instrument, where personal injury, death, or property loss is concerned or any other consequential damages.
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. Before using any electrical instrument 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 high energy sources.
4. Before applying the unit to the circuit under test, make certain that the rotary switch is set to the proper range and function.
5. Do not use this instrument to measure current on circuits operating higher than 300V RMS in a category III environment or 600V RMS in a category II environment.
6. Before taking any readings, make sure that the "ZERO" function is not activated unintentionally.
7. **REMOVE UNIT FROM CIRCUIT BEFORE ATTEMPTING TO CHANGE THE BATTERY.**

OPERATING INSTRUCTIONS

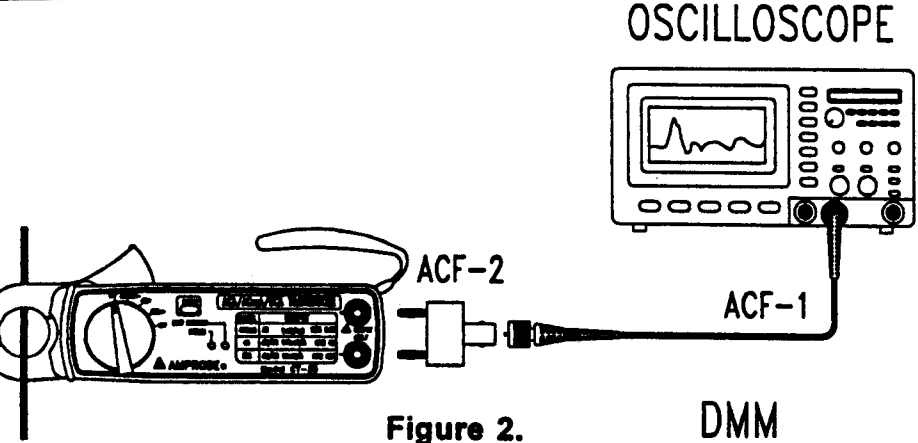


Figure 2.

DC Current Measurement (Conventional)

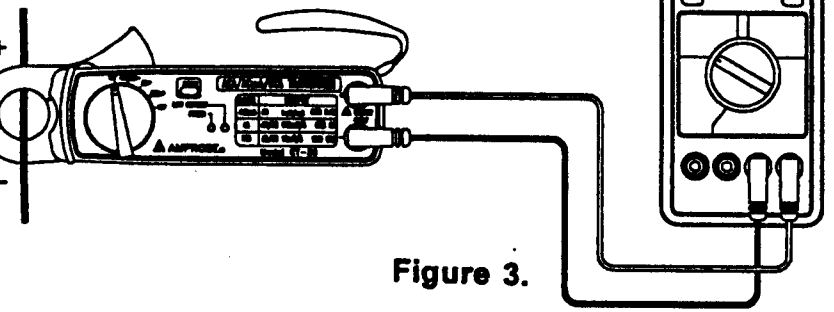


Figure 3.

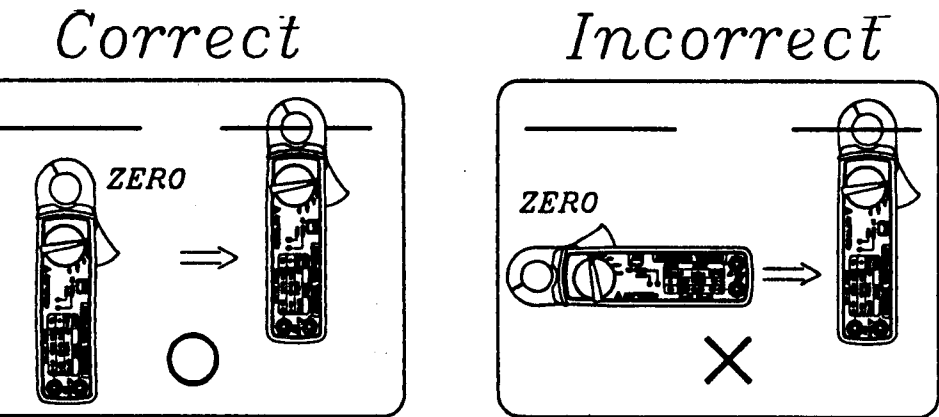


Figure 4.

DC Current Measurement

1. Set the rotary switch on the CT-30 to 4A or 30A.
2. Plug one end of each test lead into the meter terminals
3. Plug in the other end of the test lead into a multimeter.
4. Make sure current probe's and multimeter's COM terminals are connected.
5. Set the range of multimeter at 200 or 400 mVDC for DC current measurement.
6. Push the zero button on the CT-30 to adjust the reading of multimeter to zero. See Fig. 4 for proper orientation when zeroing.
7. Press the trigger to open the jaw and fully enclose the conductor to be measured. No air gap is allowed between the two half jaws.
8. Read the measured value from the meter's display. The switch side of the CT-30 should face (-) return for conventional current flow (+ reading). See Fig. 3.

AC Current Measurement

1. Set the rotary switch on the CT-30 to 400mA, 4A, or 30A.
2. Plug one end of each test lead into the meter terminals
3. Plug in the other end of the test lead into a multimeter. It is strongly recommended a **TRUE RMS** multimeter is used for AC current measurement for more accurate reading.
4. Make sure current probe's and multimeter's COM terminals are connected.
5. Set the range of multimeter at 200 or 400 mVAC for AC current measurement.
6. Press the trigger to open the jaw and fully enclose the conductor to be measured. No air gap should be between the two halves of the jaw.
7. Read the measured value from the meter's display.

Current Waveform Observation(Connected to an Oscilloscope) See Fig. 2.

1. Set the rotary switch on the CT-30 to 400mA, 4A, or 30A.
2. Insert the ACF-2 BNC to banana adapter (optional) into the CT-30 output terminals.
3. Connect the ACF-1 BNC to BNC test lead to the ACF-2 adapter.
4. Connect the other end of the ACF-1 into oscilloscope's input.
5. Make sure the polarities of the output of the CT-30 and the input of the oscilloscope are connected correctly.
6. Press the trigger to open the jaw and fully enclose the conductor to be measured. No air gap should be between the two halves of the jaw.
7. Select appropriate voltage range on the scope (eg. mv/div) so that output (200mV or 400mV full scale) from the CT-30 can be observed.

SPECIFICATIONS(Operating temperature 0°C to 40°C)

Range	Output	Accuracy(23°C±5°C)		Accuracy(0°C to 10°C)		Accuracy(10°C to 40°C)	
DC 400mA ¹	DC 1mV/mA	_____ ¹		_____ ¹		_____ ¹	
DC 4A	DC 100mV/A	±2.0%±3mA		±4.0%±3mA		±3.0%±3mA	
DC 30A	DC 10mV/A	±2.0%±30mA		±4.0%±30mA		±3.0%±30mA	
		50/60Hz	40-100Hz	50/60Hz	40-100Hz	50/60Hz	40-100Hz
AC 400mA	AC 1mV/A	±2.0%±0.5mA	±2.5%±0.5mA	±4.0%±0.5mA	±5.0%±0.5mA	±3.0%±0.5mA	±3.5%±0.5mA
		50/60Hz	40-400Hz	50/60Hz	40-400Hz	50/60Hz	40-400Hz
AC 4A (0-400mA)	AC 100mV/A	±2.5%±8mA	±3.0%±8mA	±5.0%±8mA	±6.0%±8mA	±3.5%±8mA	±4.0%±8mA
AC 4A (400mA-4A)	AC 100mV/A	±2.5%±3mA	±3.0%±6mA	±5.0%±3mA	±6.0%±6mA	±3.5%±3mA	±4.0%±6mA
AC 30A	AC 10mV/A	±2.0%±30mA	±2.5%±30mA	±4.0%±30mA	±5.0%±30mA	±3.0%±30mA	±3.5%±30mA

¹400mA range is not designed for DC current measurement. The accuracy is ±2.5%±1mA, and it is only used for reference. In the DC400mA range, the output would show 0.4mV drifting (rdg, rdg+0.1, rdg+0.2, rdg+0.3, rdg+0.4, rdg+0.3, rdg+0.2, rdg+0.1, rdg,...).

For low DC milliamp (4-20mADC) readings, we recommend looping the conductor 2 times around the jaw and dividing the reading by 3. This will allow a more stable reading at such low currents.

Indoor Use
 Conductor Size: 7/8" (23mm) max. (approx.)
 Battery Type: two 1.5V SUM-3 AA, AMPROBE Model S912
 Range Selection: manual
 Power Consumption: 10 mA (approx.)
 Low battery Indication: red LED
 Operating Temperature: 32°F to 104°F (0°C to 40°C)
 Operating Humidity: less than 85% relative
 Storage Temperature: -4°F to 140°F (-20°C to 60°C)
 Storage Humidity: less than 75% relative
 Altitude: up to 2000M
 Dimension: 183mm(L)x61.3mm(W)x35.6mm (H)
 Weight: 7.2" (L) x 2.5" (W) x 1.4" (H)
 Included: 6.7 oz (190g) (battery included)
 Soft vinyl case, model SV-100
 Users manual, Part number 964768
 Test leads, model TL-RBRB
 Two "AA" 1.5V batteries, model S912

BATTERY REPLACEMENT

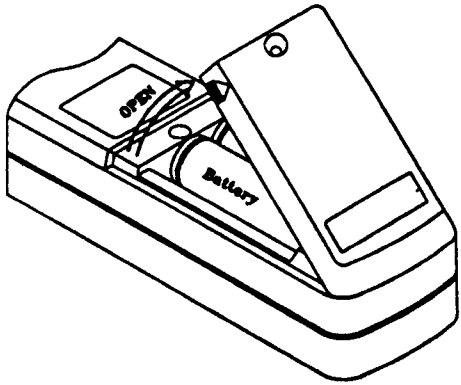


Figure 5.

When the low battery LED lights, replace the old batteries with two new batteries.

1. Remove the test leads from the clamp meter.
2. Remove the screw of the battery compartment.
3. Lift and remove the battery compartment.
4. Remove the old batteries.
5. Insert two new 1.5V SUM-3 batteries.
6. Replace the battery compartment and secure the screw.

MAINTENANCE & CLEANING

Servicing not covered in this manual should only be performed by qualified personnel. Repairs should only be performed by qualified personnel. Periodically wipe the case with a damp cloth and detergent; do not use abrasives or solvents.