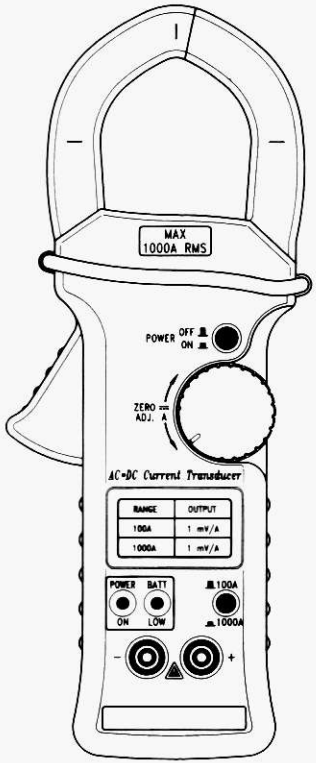
USER MANUAL

A UNIQUE AC/DC CLAMP-ON TRANSDUCER



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SAFETY INFORMATION

To ensure that you use the transducer safely, follow the safely guidelines listed below:

- Avoid working alone. Take precautions when working around moving parts.
- Use extreme caution when working around bare conductors or bus bars. Accidental contact with the conductor could result in electric shock.
- Use the transducer only as specified in this manual; Otherwise, the protection provided by the transducer may be impaired.
- Do not use the transducer if it looks damaged.
- Inspect the leads for damaged insulation or exposed metal. Check test lead continuity. Replace damaged leads.
- When making measurements, keep your fingers behind the hand guards on the transducer.
- Read this operation manual completely before using the transducer and follow all safety information.

INTRODUCTION

This current transducer has been designed for use with digital multimeters, recorders and other suitable equipment for accurate non-intrusive measurement of AC, DC and complex waveform currents. Using advanced Hall Effect technology this transducer can accurately measure currents up to 1000A r.m.s. These features make it a powerful tool for use on inverters, switch mode power supplies, industrial controllers, automotive diagnostics and other applications requiring accurate isolated current measurements.

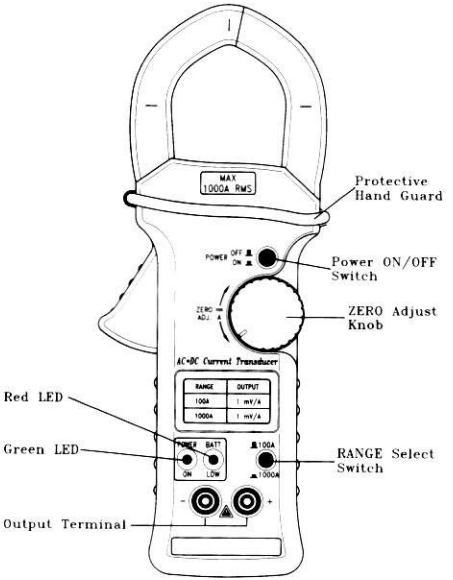

Figure 1. Appearance of Clamp Transducer

USING THE METER SAFELY

□ WARNING

Read "SAFETY INFORMATION" before using the transducer.

A **WARNING** identifies conditions and actions that pose hazard(s) to the user; a **CAUTION** identifies conditions and actions that may damage the transducer. International electrical symbols used are explained in **Table 1**.

~	AC-Alternating Current
⎓	DC-Direct Current
≂	AC and DC-Alternating and Direct Current
⏚	Ground
⧈	Double Insulation
⚠	See Explanation In The Manual

Table 1. International Electrical Symbols

OPERATING INSTRUCTIONS

☐ ALIGNMENT MARKS

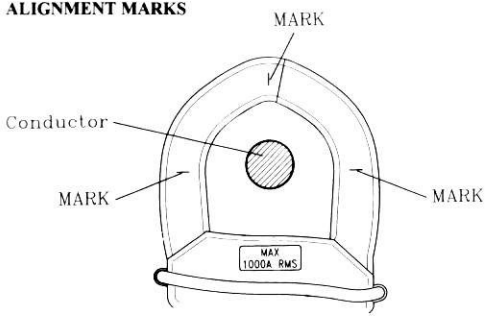

Figure 2. Alignment Marks

Encircle the conductor/bus with the instrument jaw. Position the conductor within the jaws. Centering marks will ensure measuring accuracy as shown in **Figure 2**.

☐ POWER ON

Push POWER switch to toggle ON/OFF transducer. When the transducer switched on the Green LED will light. When the Red LED is lit and the Green LED is off, the battery voltage is too low for normal operation. The battery should be changed as described in Battery Replacement. Refer to **Figure 5.**

☐ ZERO ADJUSTMENT

The output zero offset voltage of the transducer may change due to thermal shifts and other environmental conditions. To adjust the output voltage to zero, rotary zero adjust knob. Be sure the transducer is away from the current carrying conductor when this adjustment is made.

CURRENT MEASUREMENT

☐ CURRENT MEASUREMENT

Measurement Procedure:

1) Switch on the transducer using the ON OFF switch and check that the Green LED is lit.
2) Set **DMM/ WAVEFORM** switch to " **WAVEFORM**" position. The output will be a polarity sensitive DC voltage for DC current and an AC voltage for AC currents.
3) Connect the red and black output leads to a multimeter. Select the AC or DC mV range on the multimeter according to the current measurement being made.
4) If necessary adjust the transducer output voltage to zero as described in section on **ZERO ADJUSTMENT**.
5) Clamp the jaws of the transducer around the conductor ensuring a good contact between the closing faces of the jaws.
6) Observe and take measurements as required. A positive instrument reading indicates that the current is in the direction shown by the arrow on the transducer.
7) If the reading when measuring DC current on the multimeter is unstable and DC volts was selected, switch to the AC-V range on the multimeter.
8) You could also monitor the current waveform on an oscilloscope with the enclosed optional accessory, part name TL-BNC.

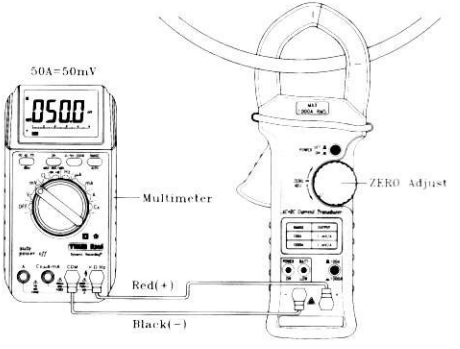

Figure 3. Current measurement.

ELECTRICAL SPECIFICATIONS

Accuracy is given as ±(% of reading + no. of least significant) at 23°C ± 5°C , with relative humidity Less than 80% R.H.

☐ DC CURRENT (Waveform output)

Range	Resolution	Accuracy
0 - 100A	1mV/1A	±(1.5%rdg+0.3A)
100 - 1000A	1mV/A	± (2.0%rdg+1A)

☐ AC CURRENT (Waveform output)

Range	Resolution	Accuracy		
		(@40Hz~65Hz)	(@65Hz~1KHz)	(@1kHz 2kHz)
0 - 100A	1mV/A	±(1.5%Hrdg+0.5A)	±(2.0%rdg+0.5A)	±(3%rdg+1A)
100 ~1000A	1mV/A	±(2.0%rdg+1A)	±(2.5%rdg+1A)	±(4%rdg+3A)

Low battery indicator: The RED LED is lit when the battery voltage drops below 6.0V (approx).

Operating temperature: 0°C to 50°C(32°F to 120°F), 0 - 80 % R.H.

Storage temperature: -20°C to 60°C(-4°F to 140°F), 0 - 80 % R.H. with BATTERY REMOVED.

Temperature coefficient: 0.12 % / °C (from 0°C to 18°C or 28°C to 50°C)

Power supply: Single standard NEDA1604, JIS006P,IEC6F22 carbonzinc or alkaline type 9V battery.

Maximum Jaw Opening: To Accommodate Circuit Cables 2"(50.8 mm) diameter

Dimension: 32 (H) * 64 (W) * 260 (L) mm.
1.26"(H) * 2.52"(W) * 10.24"(L)

Weight: 780 grams with all accessories.
(1.72lbs with all accessories.)

Accessories: Test leads (pair), manual, battery and carrying case

Safety: Designed to comply with IEC1010 - 1 Instrument Category (Overvoltage Category) III, 300V, Pollution Degree 2, Product will be marked when approved.

Optional Accessories: Shrouded Right Angle to BNC Test Leads.

Accessories and Replacement Parts

P/N	Description
30-25127-1/2U (TL-32)	TL-32 Shrouded Test Leads
30A-25617-6 (TL-BNC)	Shrouded Right Angle to BNC Test Leads
29B-25313-1	Carrying Case
61-25027-1	9 Volt Battery
91-25147-1	Instruction Manual

MAINTENANCE

WARNING

To avoid electrical shock, do not perform any service unless one is qualified to do so.

□ SERVICE

If the instrument fails to operate, check battery, test leads, etc., and replace as necessary. If the instrument still does not operate, double check operating procedure as described in this instruction manual. When servicing, use only specified replacement parts.

WARNING

To avoid electrical shock or damage to the transducer, do not let water gets inside the case. Remove the test leads from transducer before opening the case.

□ BATTERY REPLACEMENT

This transducer is powered by a single 9V battery, with NEDA1604, JIS006P, IEC6F22 carbonzinc or alkaline battery. To replace battery if the low battery red LED is lit. Use the following procedures to replace the battery:

1. Unclamp the jaw from the conductor, turn it off using the ON-OFF switch and disconnect the output leads.
2. Loosen screw of battery cover. Pull up the cover slightly, see **Figure 4**. Then Pull and Move the cover to right direction, see **Figure 5**.
3. Replace the weak battery.
4. Reverse the above procedure to close the battery cover.

□ CLEANING

To clean the instrument, use a soft cloth dampened in a solution of mild detergent and water. Do not spray cleaner directly onto the instrument, since it may leak into the cabinet and cause damage.
Do not use chemicals containing benzine, benzene, toluene, xylene, acetone or similar solvents.

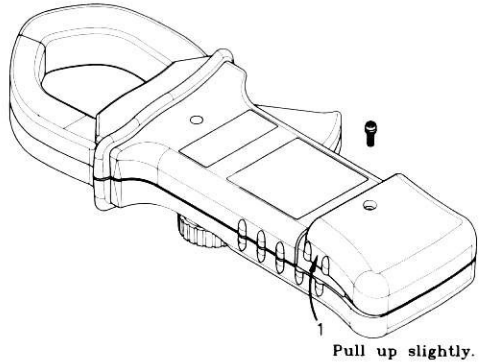

Figure 4. Step 1 of Battery Replacement.

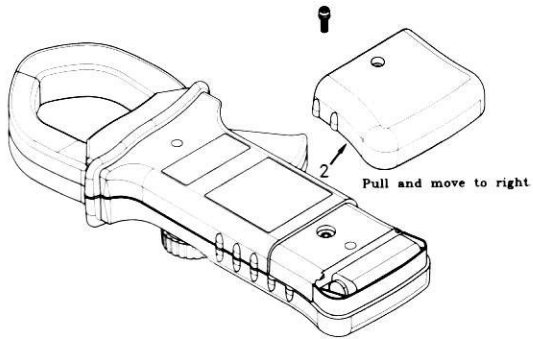

Figure 5. Step 2 of Battery Replacement.