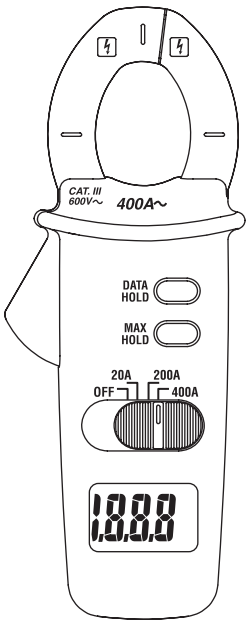
INSTRUCTION MANUAL

GREENLEE®
A Textron Company

CM-330

Clamp-on



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Description

The Greenlee CM-330 Clamp-on Ammeter is a hand-held testing device capable of measuring up to 400 amps of alternating current.

Safety

Safety is essential in the use and maintenance of Greenlee tools and equipment. This instruction manual and any markings on the tool provide information for avoiding hazards and unsafe practices related to the use of this tool. Observe all of the safety information provided.

Purpose of This Manual

This instruction manual is intended to familiarize all personnel with the safe operation and maintenance procedures for the Greenlee CM-330 Clamp-on Ammeter.

Keep this manual available to all personnel.

Replacement manuals are available upon request at no charge.

KEEP THIS MANUAL

Important Safety Information

SAFETY ALERT SYMBOL

This symbol is used to call your attention to hazards or unsafe practices which could result in an injury or property damage. The signal word, defined below, indicates the severity of the hazard. The message after the signal word provides information for preventing or avoiding the hazard.

⚠DANGER

Immediate hazards which, if not avoided, WILL result in severe injury or death.

⚠WARNING

Hazards which, if not avoided, COULD result in severe injury or death.

⚠CAUTION

Hazards or unsafe practices which, if not avoided, MAY result in injury or property damage.

⚠WARNING

Read and **understand** this material before operating or servicing this equipment. Failure to understand how to safely operate this tool could result in an accident causing serious injury or death.

⚠WARNING

Electric shock hazard:

Contact with live circuits could result in severe injury or death.

Important Safety Information

⚠WARNING

Electric shock and fire hazard:

- Do not expose this unit to rain or moisture.
- Do not use the unit if it is wet or damaged.
- Use this unit for the manufacturer's intended purpose only, as described in this manual. Any other use can impair the protection provided by the unit.

Failure to observe these warnings could result in severe injury or death.

⚠WARNING

Electric shock hazard:

- Do not operate with the case or battery door open.
- Before opening the case or battery door, remove the jaw from the circuit and shut off the unit.

Failure to observe these warnings could result in severe injury or death.

⚠WARNING

Electric shock hazard:

Using this unit near equipment that generates electromagnetic interference can result in unstable or inaccurate readings.

Failure to observe this warning could result in severe injury or death.

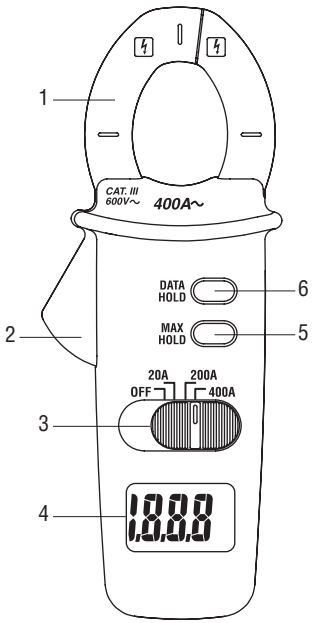
⚠CAUTION

Electric shock hazard:

- Do not attempt to repair this unit. It contains no user-serviceable parts.
- Do not expose the unit to extremes in temperature or high humidity. Refer to "Specifications."

Failure to observe these precautions may result in injury and can damage the unit.

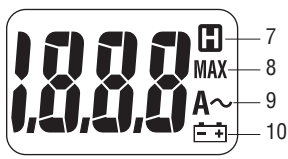
Identification



1. Jaw
2. Lever
3. Selector
4. Display
5. Max Hold button
6. Data Hold button

Display Icons

7. H — Data Hold is activated.
8. **MAX** — Max Hold is activated.
9. A~ — AC amps
10. — Low battery indicator



Symbols on the Unit

⚠ Warning—Read the instruction manual

Risk of electric shock

Double insulation

Using the Features

- **Data Hold Button** Press momentarily to hold the present value on the display. H will appear on the display.

  Press again to return to normal mode.

- **Max Hold Button** Press momentarily to hold the maximum value on the display. "MAX" will appear on the display. The highest value will remain on the display, which will update when the meter measures a new maximum.

  Press again to return to normal mode.

Operation

⚠WARNING

Electric shock hazard:

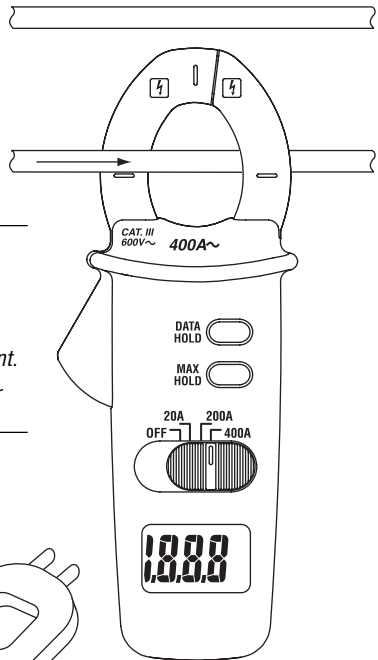
Contact with live circuits could result in severe injury or death.

1. Set the selector according to the Settings Table. Start with the highest measurement range.
2. Refer to “Typical Measurements” for specific measurement instructions.
3. Test the unit on a known functioning circuit or component.
   - If the unit does not function as expected on a known functioning circuit, replace the battery.
   - If the unit still does not function as expected, send the unit to Greenlee for repair. Refer to the instructions under the Warranty.
4. Take the reading from the circuit or component to be tested. If the resolution is not satisfactory, remove the meter from the circuit and change to the next lower range.

Settings Table

To measure AC current in this range …	Set the selector to this symbol …
200 A to 400 A	**400A**
20 A to 200 A	**200A**
0 A to 20 A	**20A**

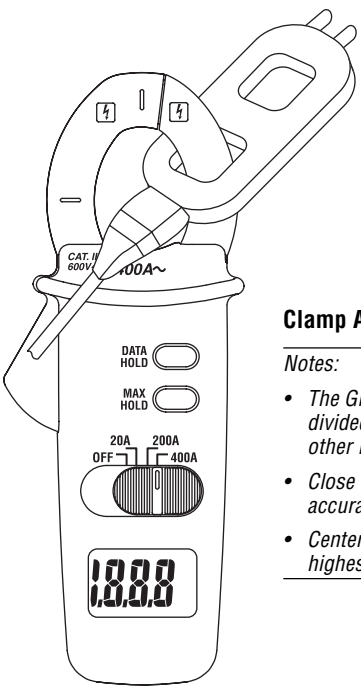
Typical Measurements



Clamp Around Wire

Notes:

- *Clamp the jaw around one conductor only.*
- *Close the jaw completely to ensure accurate measurement.*
- *Center the wire in the jaw for highest accuracy.*



Clamp Around Line Splitter

Notes:

- *The Greenlee 93-30 Line Splitter is divided. One section renders amps; the other renders amps multiplied by 10.*
- *Close the jaw completely to ensure accurate measurement.*
- *Center the line splitter in the jaw for highest accuracy.*

Accuracy

Refer to “Specifications” for operating conditions and temperature coefficient.

Accuracy is specified as follows: ± (a percentage of the reading + a fixed amount) at 23 °C ± 5 °C (73.4 °F ± 9 °F), 0% to 80% relative humidity.

Accuracy Table

Measurement Range	Accuracy	Frequency Range
19.99 A	± (3.0% + 0.05 A)	50 to 60 Hz
199.9 A	± (2.0% + 0.5 A)	50 to 60 Hz
400 A	± (2.0% + 5 A)	50 to 60 Hz

Specifications

Display: 3-1/2-digit LCD (1999 maximum reading)

Sampling Rate: 2.5 per second

Overrange Indication: “OL” appears on the display

Jaw Opening: 30 mm (1.18")

Maximum Conductor Diameter: 27 mm (1.06")

Measurement Category: Category III, 600 V

Temperature Coefficient: 0.2 x (specified accuracy) per °C
below 18 °C or above 28 °C

Operating Conditions:
0% to 80% Relative Humidity: 0 °C to 30 °C (32 °F to 86 °F)
0% to 75% Relative Humidity: 30 °C to 50 °C (86 °F to 112 °F)
Altitude: 2000 m (6500') maximum
Indoor use only

Storage Conditions: -20 °C to 60 °C (-4 °F to 140° F),
0% to 80% relative humidity
Remove battery

Pollution Degree: 2

Battery: 9-Volt battery (NEDA 1604, JIS 006P or IEC 6LF22)

Measurement Categories

These definitions were derived from the international safety standard for insulation coordination as it applies to measurement, control, and laboratory equipment. These measurement categories are explained in more detail by the International Electrotechnical Commission; refer to either of their publications: IEC 61010-1 or IEC 60664.

Measurement Category I

Signal level. Electronic and telecommunication equipment, or parts thereof. Some examples include transient-protected electronic circuits inside photocopiers and modems.

Measurement Category II

Local level. Appliances, portable equipment, and the circuits they are plugged into. Some examples include light fixtures, televisions, and long branch circuits.

Measurement Category III

Distribution level. Permanently installed machines and the circuits they are hard-wired to. Some examples include conveyor systems and the main circuit breaker panels of a building's electrical system.

Measurement Category IV

Primary supply level. Overhead lines and other cable systems. Some examples include cables, meters, transformers, and other exterior equipment owned by the power utility.

Statement of Conformity

Greenlee Textron Inc. is certified in accordance with ISO 9000 (2000) for our Quality Management Systems.

The instrument enclosed has been checked and/or calibrated using equipment that is traceable to the National Institute for Standards and Technology (NIST).

Maintenance

⚠CAUTION

Electric shock hazard:

- Do not attempt to repair this unit. It contains no user-serviceable parts.
- Do not expose the unit to extremes in temperature or high humidity. Refer to “Specifications.”

Failure to observe these precautions may result in injury and can damage the unit.

Battery Replacement

⚠WARNING

Electric shock hazard:

- Do not operate with the case or battery door open.
- Before opening the case or battery door, remove the jaw from the circuit and shut off the unit.

Failure to observe these warnings could result in severe injury or death.

1. Disconnect the unit from the circuit. Turn the unit OFF.
2. Remove the screw from the battery door.
3. Remove the battery door.
4. Replace the battery (observe polarity).
5. Replace the battery door and the screw.

Cleaning

Periodically wipe the case with a damp cloth and mild detergent; do not use abrasives or solvents.

Lifetime Limited Warranty

Greenlee Textron warrants to the original purchaser of these goods for use that these products will be free from defects in workmanship and material for their useful life, excepting normal wear and abuse. This warranty is subject to the same terms and conditions contained in Greenlee Textron's standard one-year limited warranty.

For items not covered under warranty (such as items dropped, abused, etc.), a repair cost quote is available upon request.

Note: Prior to returning any test instrument, please check replaceable batteries or make sure the battery is at full charge.

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