FLUKE®

# 323/324/325

Clamp Meter

**Users Manual**

PN 4045153
May 2012

## LIMITED WARRANTY AND LIMITATION OF LIABILITY

This Fluke product will be free from defects in material and workmanship for two years from the date of purchase. This warranty does not cover fuses, disposable batteries, or damage from accident, neglect, misuse, alteration, contamination, or abnormal conditions of operation or handling. Resellers are not authorized to extend any other warranty on Fluke's behalf. To obtain service during the warranty period, contact your nearest Fluke authorized service center to obtain return authorization information, then send the product to that Service Center with a description of the problem.

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11/99

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# Introduction

The Fluke 323/324/325 Clamp Meters (the Product) measure ac and dc voltage, ac current, resistance, and continuity. The 324 and 325 can also measure capacitance and contact temperature. The 325 can also measure dc current and frequency. Note that the 325 is shown in all of the illustrations. For temperature measurement, you must use the included K-Type Thermocouple.

**⚠⚠Warning**

**Read "Safety Information" before you use the Product.**

# How to Contact Fluke

To contact Fluke, call one of the following telephone numbers:

- Technical Support USA: 1-800-44-FLUKE (1-800-443-5853)
- Calibration/Repair USA: 1-888-99-FLUKE (1-888-993-5853)
- Canada: 1-800-36-FLUKE (1-800-363-5853)
- Europe: +31 402-675-200

- Japan: +81-3-3434-0181
- Singapore: +65-6799-5566
- Anywhere in the world: +1-425-446-5500

Or, visit Fluke's website at www.fluke.com.

To register your product, visit http://register.fluke.com.

To see, print, or download the latest manual supplement, visit http://us.fluke.com/usen/support/manuals.

## *Safety Information*

A **Warning** identifies conditions and procedures that are dangerous to the user. A **Caution** identifies conditions and procedures that can cause damage to the Product or the equipment under test.

Table 1 tells you about symbols used on the Product and in this manual.

**⚠⚠Warning**

**To prevent personal injury, use the Product only as specified, or the protection supplied by the Product can be compromised.**

**To prevent possible electrical shock, fire, or personal injury:**

- **Use only correct measurement category (CAT), voltage, and amperage rated probes, test leads, and adapters for the measurement.**
- **Do not touch voltages > 30 V ac rms, 42 V ac peak, or 60 V dc.**
- **Carefully read all instructions.**
- **Hold the Product behind the tactile barrier. See The Clamp Meter, item ①.**
- **Do not exceed the Measurement Category (CAT) rating of the lowest rated individual component of a Product, probe, or accessory.**
- **Do not measure current while the test leads are in the input jacks.**
- **Do not use the Product around explosive gas, vapor, or in damp or wet environments.**
- **Limit operation to the specified measurement category, voltage, or amperage ratings.**
- **Do not work alone.**
- **Do not apply more than the rated voltage, between the terminals or between each terminal and earth ground.**

- **Comply with local and national safety codes. Use personal protective equipment (approved rubber gloves, face protection, and flame-resistant clothes) to prevent shock and arc blast injury where hazardous live conductors are exposed.**
- **Replace the batteries when the low battery indicator shows to prevent incorrect measurements.**
- **The battery door must be closed and locked before you operate the Product.**
- **Measure a known voltage first to make sure that the Product operates correctly.**
- **Remove all probes, test leads, and accessories that are not necessary for the measurement.**
- **Only use probes, test leads, and accessories that have the same measurement category and voltage rating as the Product.**
- **Keep fingers behind the finger guards on the probes.**

- **Connect the common test lead before the live test lead and remove the live test lead before the common test lead.**
- **Remove all probes, test leads, and accessories before the battery door is opened.**
- **Do not use and disable the Product if it is damaged.**
- **Do not use the Product if it operates incorrectly.**
- **Do not use test leads if they are damaged. Examine the test leads for damaged insulation, exposed metal. Check test lead continuity.**
- **Before each use, examine the Product. Look for cracks or missing pieces of the clamp housing. Also look for loose or weakened components. Carefully examine the insulation around the jaws. See The Clamp Meter, item ②.**
- **Examine the case before you use the Product. Look for cracks or missing plastic. Carefully look at the insulation around the terminals.**
- **Read all safety Information before you use the Product.**

- **Remove batteries to prevent battery leakage and damage to the Product if it is not used for an extended period.**
- **Remove batteries to prevent battery leakage and damage to the Product if is to be stored above its operating temperature.**

**⚠Caution**

**To avoid possible damage to the Product or to equipment under test, use a thermocouple rated for the temperatures to be measured. The Product is rated for -10.0 °C to +400.0 °C and 14 °F to 752 °F. The included type-K thermocouple is rated to 260 °C.**

**Table 1. Symbols**

| Symbol | Meaning | Symbol | Meaning |
|---|---|---|---|
| ~ | AC (Alternating Current) | ⏚ | Earth ground |
| ⎓ | DC (Direct Current) |  | Do not dispose of this product as unsorted municipal waste. Go to Fluke's website for recycling information. |
| ≂ | AC and DC Current | CE | Conforms to European Union directives. |
|  | Risk of Danger. Important information. See Manual. |  | Double insulated |
|  | Hazardous voltage. Risk of electric shock. |  | This product has been tested to the requirements of CAN/CSA-C22.2 No. 61010-1, second edition, including Amendment 1, or a later version of the same standard incorporating the same level of testing requirements. |
|  | Conforms to relevant Australian standards. |  | German certifying body. |

**Table 1. Symbols (cont.)**

| Symbol | Meaning | Symbol | Meaning |
|---|---|---|---|
|  | Battery |  | Application around and removal from HAZARDOUS LIVE conductors is permitted. |
| **CAT III** | CAT III equipment is designed to protect against transients in equipment in fixed equipment installations, such as distribution panels, feeders and short branch circuits, and lighting systems in large buildings. | **CAT IV** | CAT IV equipment is designed to protect against transients from the primary supply level, such as an electricity meter or an overhead or underground utility service. |

*Note*

*The Measurement Category (CAT) and voltage rating of combinations of test probes, test probe accessories, current clamp accessories, and the Product is the LOWEST rating of individual components.*

# How to Clean the Product

Regularly wipe the case with a damp cloth and weak detergent.

**⚠ Caution**

**To prevent damage to the Product, do not use abrasives or solvents to clean the Product case.**

To clean the Product Jaw:

1. Examine the jaw mating surface to make sure it is clean. If there is unwanted material (including rust), jaw closure will not be correct and there will be measurement errors.
2. Open the jaws and clean the clamp metal ends with a lightly oiled cloth.

# Specifications

## Electrical Specifications

### AC Current (Jaw)

Range
- 323 ..... 400.0 A
- 324, 325 ..... (40.00, 400.0) A

Resolution
- 323 ..... 0.1 A
- 324, 325 ..... (0.01, 0.1) A

Accuracy ..... 2.0 % ±5 digits (45 – 65 Hz)
2.5 % ±5 digits (65 – 400 Hz)

### DC Current with Jaw (325)

Range ..... (40.00, 400.0) A
Resolution ..... (0.01, 0.1) A
Accuracy ..... 2.0 % ± 5 digits

### AC Voltage

Range ..... 600.0 V
Resolution ..... 0.1 V
Accuracy (45 – 400 Hz) ..... 1.5 % ± 5 digits

_DC Voltage_

Range ..... 600.0 V
Resolution ..... 0.1 V
Accuracy ..... 1 % ± 5 digits

_Resistance_

Range
- 323, 324 ..... (400.0, 4000) Ω
- 325 ..... (400.0, 4000, 40000) Ω

Resolution ..... (0.1, 1, 10) Ω
Accuracy ..... 1 % ±5 digits
Continuity Beeper
- 323 ..... ≤70 Ω
- 324/325 ..... ≤30 Ω

_Capacitance (324, 325)_

Range ..... (100.0, 1000) µF
Resolution ..... (0.1, 1) µF
Accuracy ..... 1 % ±4 digits

_Frequency (325)_

Range ..... 5.0 to 500.0 Hz

Resolution .....0.1 Hz
Accuracy .....0.5 % ±4 digits
Trigger Level .....5 to 10 Hz, ≥10 A
10 to 100 Hz, ≥5 A
100 to 500 Hz, ≥10 A

*Contact Temperature (324, 325)*

Range.....-10.0 °C to 400.0 °C
Resolution .....0.1 °C
Accuracy .....1 % ±8 digits
Note: Temperature uncertainty (accuracy) does not include error of the thermocouple probe.

***Mechanical Specifications***

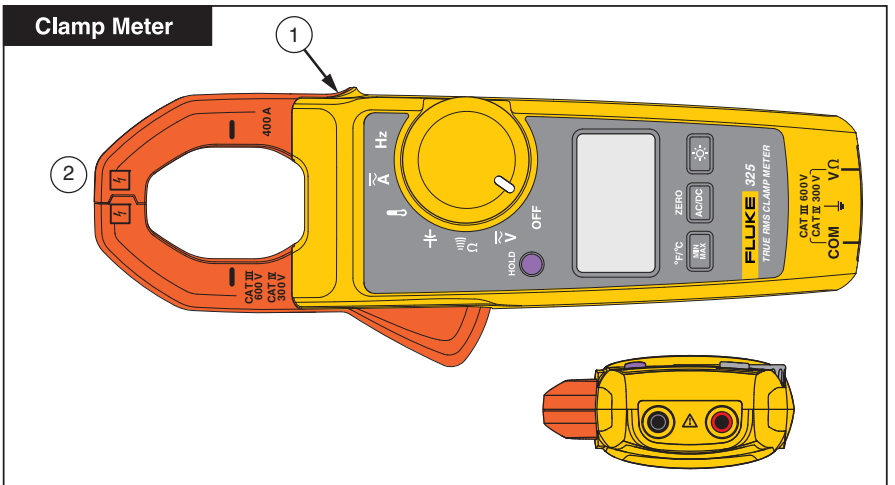
Size (L x W x H) .....(207 x 75 x 34) mm
Weight
323.....265 g
324.....208 g
325.....283 g

***Environmental Specifications***

Operating Temperature.....-10 °C to +50 °C
Storage Temp .....-30 °C to +60 °C

| | |
|---|---|
| Operating Humidity | Non Condensing (≤10 °C)<br>≤90 % RH (at 10 °C to 30 °C)<br>≤75 % RH (at 30 °C to 40 °C)<br>≤45 % RH (at 40 °C to 50 °C)<br>(Without Condensation) |
| Operating Altitude | 2000 meters |
| Storage Altitude | 12,000 meters |
| EMI, EMC | Meets all applicable requirements in EN/IEC 61326-1 |
| Temperature Coefficients | Add 0.1 x specified accuracy for each degree C above 28 °C or below 18 °C |
| Over Voltage Category | CAT IV 300 V, CAT III 600 V |
| Safety Compliance | EN/IEC 61010-1, Pollution Degree 2<br>EN/IEC 61010-2-032<br>EN/IEC 61010-031:2002/A1:2008<br>CE |
| Agency Approvals | C SP® US Complies with CAN/CSA-C22.2 No. 61010-1, 2nd edition, including Amendment 1., N10140, TÜV |
| IP Rating | IP 30 Per IEC 60529:2001; Non-operating |
| Batteries | 2 AAA, NEDA 24A, IEC LR03 |

# The Meter

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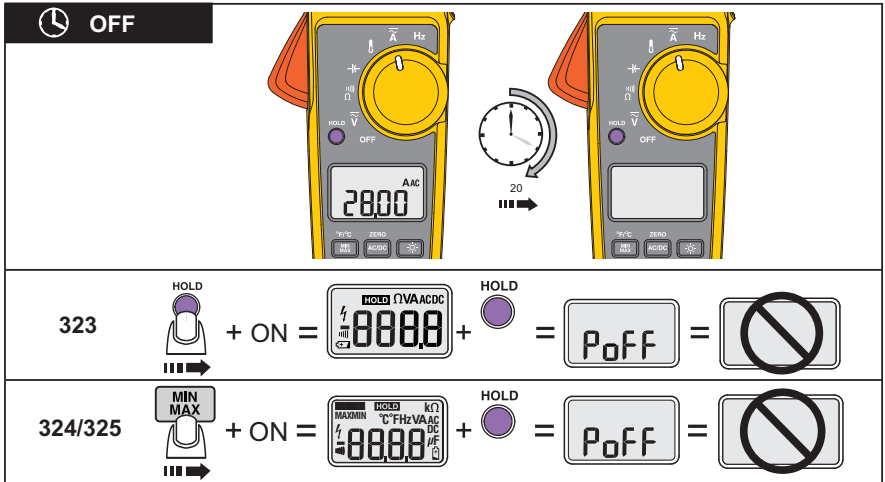


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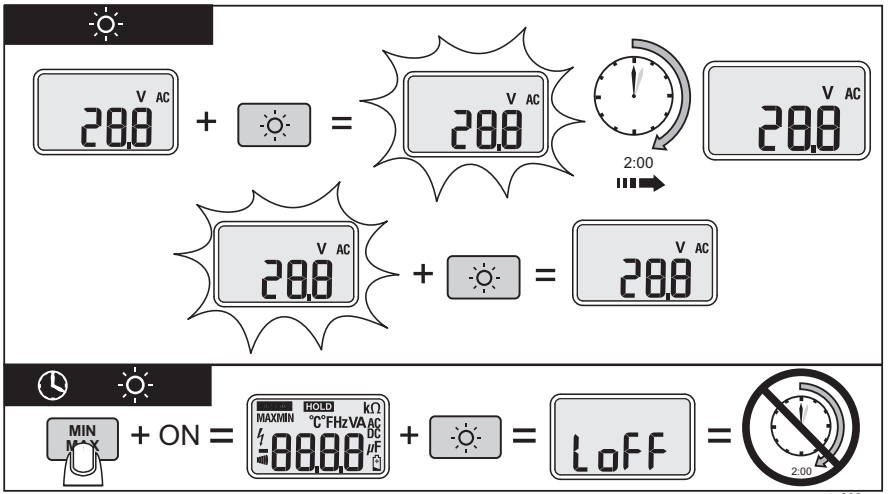


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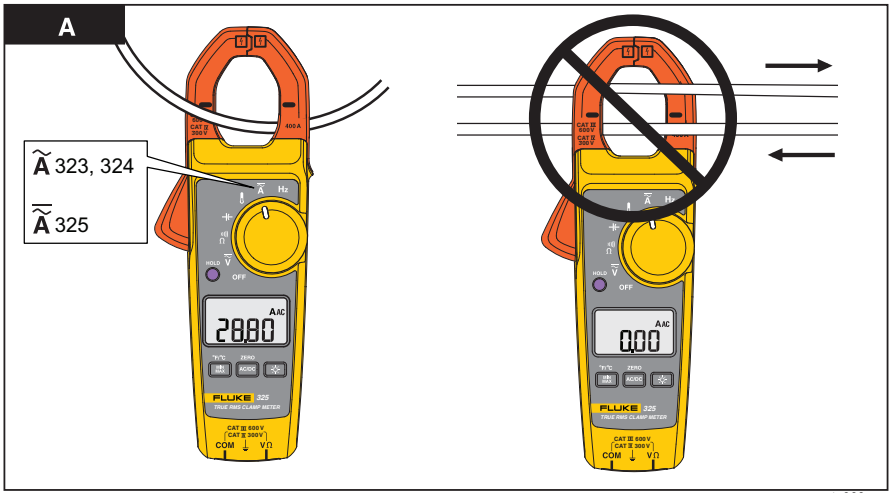
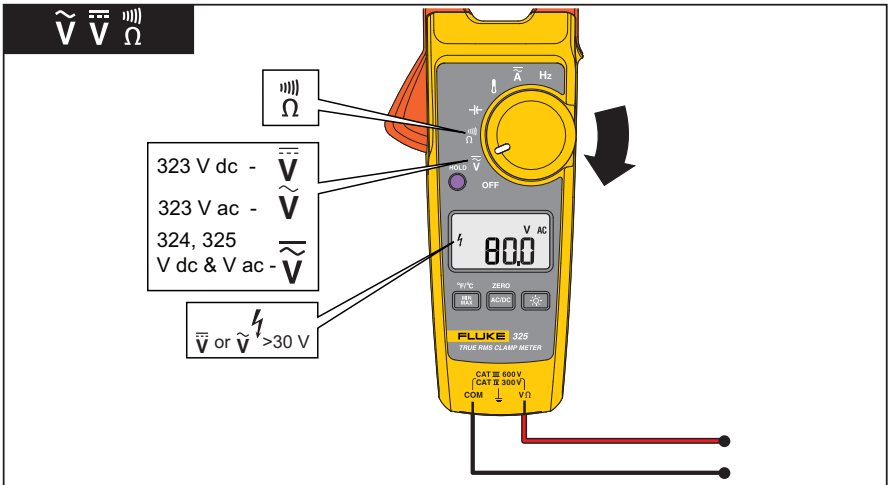
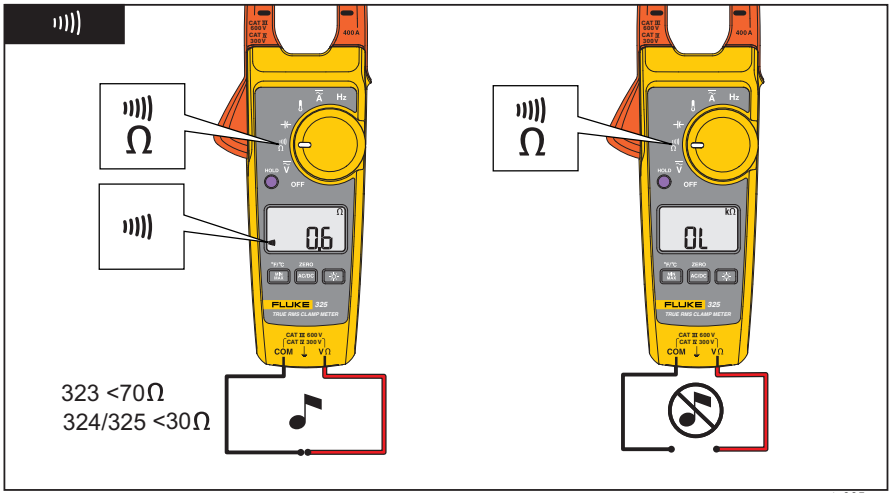

A
~A 323, 324
~A 325
400A
Hz
HOLD
OFF
28.80
AAC
ZERO
FLUKE 325
TRUE RMS CLAMP METER
CAT III 600 V
CAT II 300 V
COM
VΩ
0.00

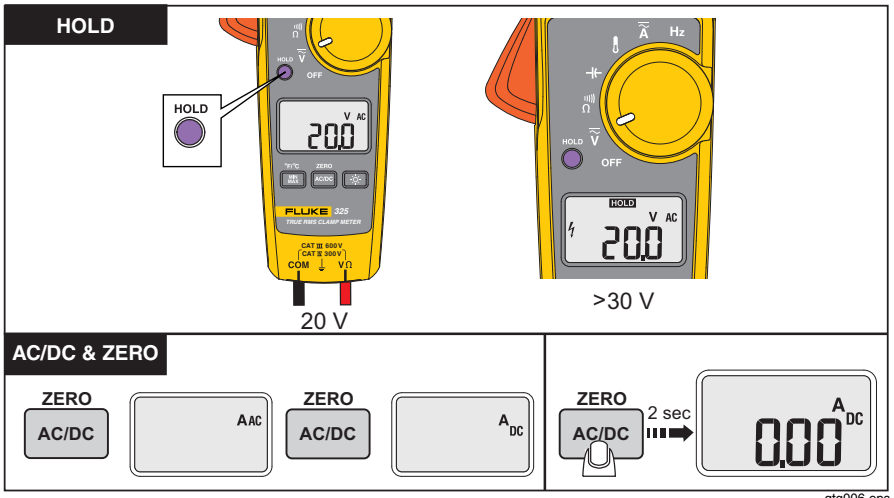
gtq003.eps


323 V dc -
323 V ac -
324, 325
V dc & V ac -
or >30 V
HOLD
OFF
V AC
80.0
ZERO
AC/DC
FLUKE 325
TRUE RMS CLAMP METER
CAT III 600 V
CAT II 300 V
COM
VΩ

gtq004.eps


Ω
Ω
0.6
OL
FLUKE 325
CAT III 600 V
CAT II 300 V
COM
VΩ
323 <70Ω
324/325 <30Ω

gtq005.eps


HOLD
HOLD
OFF
V AC
20.0
FLUKE 325
CAT III 600 V
CAT II 300 V
COM
VΩ
20 V
A Hz
HOLD
OFF
HOLD
V AC
20.0
>30 V
AC/DC & ZERO
ZERO
AC/DC
AAC
ZERO
AC/DC
ADC
ZERO
AC/DC
2 sec
A
DC
0.00

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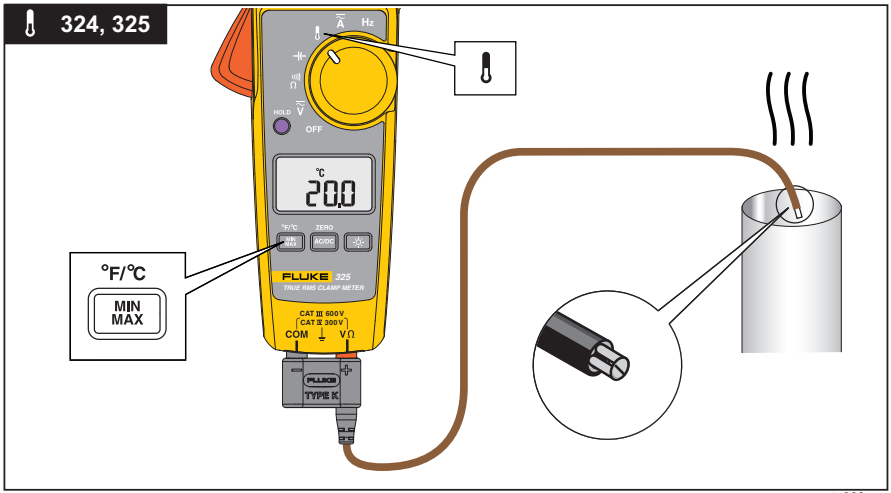
324, 325
°F/°C
MIN
MAX
OFF
HOLD
20.0
°F/°C
ZERO
FLUKE 325
TRUE RMS CLAMP METER
CAT III 600V
CAT II 300V
COM
VΩ
FLUKE
TYPE K

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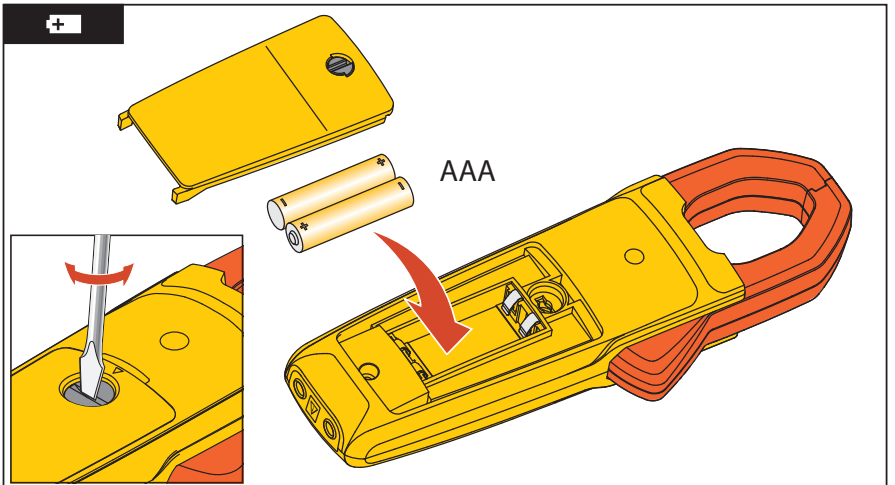


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