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FLUKE®

368/369

AC Leakage Current Clamp

Users Manual

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This Fluke product will be free from defects in material and workmanship for one year 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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Introduction

The 368/369 AC Leakage Current Clamp (the Product) is a handheld tool for measurement of ac leakage current.

Principle of Leakage Current Measurement

Based on the electromagnetic induction principle, the Product has a ring-shape current transformer comprised of a metal core and coil winding. The current transformer senses the magnetic field produced by the current or by the vector sum of the currents flowing in the conductor under test. The current transformer then produces a current proportional to the current flowing in the conductor.

See the *Product Functions* section near the end of this manual.

Safety Information

A **Warning** identifies hazardous 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.

⚠⚠ Warning

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

- **Carefully read all instructions.**
- **Read all safety Information before you use the Product.**
- **Use the Product only as specified, or the protection supplied by the Product can be compromised.**
- **Do not use the Product around explosive gas, vapor, or in damp or wet environments.**
- **Before each use, examine the Product. Look for cracks or missing pieces of the Product housing or output cable insulation. Also look for loose or weakened components. Carefully examine the insulation around the jaws. See the *Product Overview* section, item ⑪.**
- **Do not use the Product if it is damaged.**
- **Disable the Product if it is damaged.**

- **Do not use the Product if it operates incorrectly.**
- **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.**
- **Do not touch voltages >30 V ac rms, 42 V ac peak, or 60 V dc.**
- **Limit operation to the specified measurement category, voltage, or amperage ratings.**
- **Hold the Product behind the tactile barrier. See the *Product Overview* section, item ①.**
- **The battery door must be closed and locked before you operate the Product.**
- **Replace the batteries when the low battery indicator shows to prevent incorrect measurements.**
- **Remove the batteries if the Product is not used for an extended period of time, or if stored in temperatures above 50 °C. If the batteries are not removed, battery leakage can damage the Product.**
- **Do not operate the Product with covers removed or the case open. Hazardous voltage exposure is possible.**
- **Repair the Product before use if the battery leaks.**

- **Use only specified replacement parts.**
- **Have an approved technician repair the Product.**

For safe operation of the Product, do not operate within external low frequency magnetic fields >100 A/m.

⚠Caution

To avoid damage to the Product:

- **Do not subject the jaw to unreasonably strong shock, vibration, or force.**
- **If dust gets into the top of the jaws, remove it immediately. Do not close the jaws when dust is trapped in its joints as the sensor may be damaged.**

Table 1 is a list of symbols used on the Product or in this manual.

Table 1. Symbols

	WARNING. RISK OF DANGER.
	WARNING. HAZARDOUS VOLTAGE. Risk of electric shock.
	Consult user documentation.
	Double Insulated
	Application around and removal from uninsulated hazardous live conductors is permitted.
	Do not operate within external low frequency magnetic fields >100A/m.
CAT III	Measurement Category III is applicable to test and measuring circuits connected to the distribution part of the building's low-voltage MAINS installation.

Table 1. Symbols (cont.)

	Battery
	Conforms to European Union directives.
	Certified by CSA Group to North American safety standards.
	Conforms to relevant Australian EMC standards.
	Conforms to relevant South Korean EMC Standards.
	This product complies with the WEEE Directive marking requirements. The affixed label indicates that you must not discard this electrical/electronic product in domestic household waste. Product Category: With reference to the equipment types in the WEEE Directive Annex I, this product is classed as category 9 "Monitoring and Control Instrumentation" product. Do not dispose of this product as unsorted municipal waste.

Product Overview

Table 2 and Figure 1 explain the Product features.

Table 2. Features

①	Keep fingers below the **Tactile Barrier**.
②	Push HOLD to retain the measured data on the display. When pushed, HOLD shows on the display. When pushed again, data hold is canceled and HOLD disappears.
③	The display shows the measured value (digital reading), unit, function, and low-battery symbol.
④	Push mA/A to choose the range of ac current (either mA or A). Push and hold mA/A for 2 seconds to turn on the filter.
⑤	Push MIN MAX to show the minimum, maximum, and average reading. When pushed, MIN MAX shows on the display.

Table 2. Features (cont.)

⑥	Push 🔆 to turn on the display backlight. Push and hold 🔆 for 2 seconds to turn on the spotlight. See *Spotlight*.
⑦	Push ⏻ to turn on or turns off the Product.
⑧	Jaw trigger
⑨	Push the jaw lock button and the trigger together to unlock the jaw.
⑩	Spotlight. See *Spotlight*.
⑪	Jaw
⑫	Battery Housing holds the batteries. See *Batteries*.

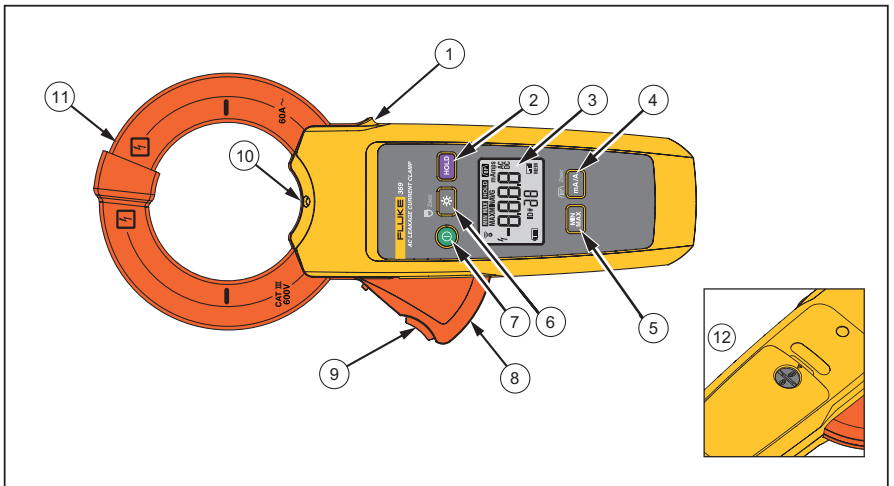

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Figure 1. Product Features

The Display

Table 3 and Figure 2 explain the Product display.

Table 3. Display

①	Battery Symbol
②	Main display
③	The Product is searching for ranges.
④	Fluke Connect is on. (Available in 368 FC and 369 FC only.)
⑤	Min, Max, or Avg reading is showing.
⑥	MinMax mode is active.
⑦	Hold mode is active.
⑧	Filter is active and filters signals from 40 Hz – 70 Hz.
⑨	mA AC or A AC
⑩	Remaining memory (Available in 368 FC and 369 FC only.)
⑪	Product identification number when used with Fluke Connect. (Available in 368 FC and 369 FC only.)

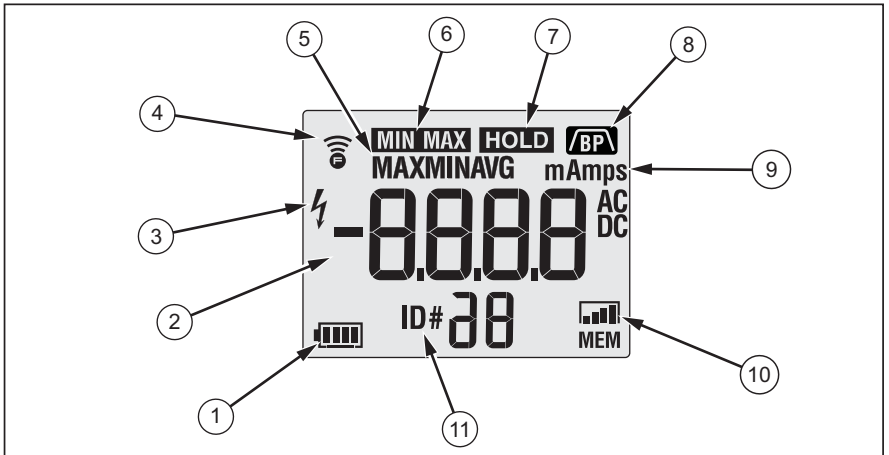


Figure 2. Display

Clean the Product

Periodically wipe the case with a damp cloth and mild detergent.

⚠ Caution

To avoid damaging the Product, do not use abrasives or solvents to clean the Product.

1. Inspect the jaw mating surface for cleanliness. If any foreign material is present, the jaw will not close properly and measurement errors will result.
2. Open the jaws and clean the clamp metal ends with a lightly oiled cloth.

Maintenance

If the Product does not work or perform properly, use these steps to help isolate the problem:

1. Inspect the jaw mating surface for cleanliness. If any foreign material is present, the jaw will not close properly and measurement errors will result.
2. Verify that the range on the Product is correct.

Replacement Parts

Replacement parts are listed in Table 4. To order, see *How to Contact Fluke*.

Table 4. Replacement Parts

Part	Description	Fluke Part Number
Battery	2AA, NEDA 15A, IEC LR6	376756
Battery door assembly	English	4700598
	Chinese	4739829

Specifications

General

Measurement functions ..... AC current

Display (LCD) ..... Digital reading: 3300 counts, LCD refresh rate 4 times/sec

Range selection ..... mA/A: manual selection

3 mA/30 mA/300 mA: auto selection

3 A/30 A/60 A: auto selection

Battery

Type ..... 2 AA, IEC LR6, NEDA 15A, alkaline

Life ..... >150 hours without backlight and spotlight

Maximum conductor diameter ..... 368: 40 mm, 369: 61 mm

Automatic power off ..... 15 minutes after the last switch operation.

Dimensions

369 ..... 116 mm (w) x 257 mm (h) x 46 mm (d)

368 ..... 101 mm (w) x 234 mm (h) x 46 mm (d)

Weight

369 .....600 g

368 .....500 g

Electrical Specifications

Reference Conditions .....23 ±5 °C and 80 % RH maximum

A AC Range .....3 mA, 30 mA, 300 mA, 3 A, 30 A, 60 A

Frequency .....40 Hz to 1 KHz

Crest Factor 3

AC Current Measurement

Accuracy is specified for 1 year after calibration. Accuracy is given as ±(% reading + digit)

Range	Resolution	368		369		T.C./°C Outside 18 °C to 28 °C
		Filter On (40 to 70 Hz)	Filter Off (40 to 1 kHz)	Filter On (40 to 70 Hz)	Filter Off (40 to 1 kHz)	
3 mA[1]	0.001 mA	1+5	1+5	1.5+5	1.5+5	0.02+1
30 mA	0.01 mA	1+5	1+5	1.5+5	1.5+5	0.02+1
300 mA	0.1 mA	1+5	1+5	1.5+5	1.5+5	0.02+1
3 A	0.001 A	1+5	1+5	1.5+5	1.5+5	0.02+1
30 A	0.01 A	1+5	1+5	1.5+5	1.5+5	0.02+1
60 A	0.1 A	2+5	2+5	2+5	2+5	0.02+1

[1] The minimum value is 10 µA rms.

Environmental Specifications

Operating temperature .....-10 °C to +50 °C

Storage temperature.....-40 °C to +60 °C

Operating humidity
(without condensation).....Non condensing (<10 °C)
90 % RH (10 °C to 30 °C)
75 % RH (30 °C to 40 °C)
45 % RH (40 °C to 50 °C)

Ingress Protection .....IEC 60529: IP30 with jaw closed

Operating Altitude.....2,000 m

Storage Altitude .....12,000 m

Current Sensor Operating Class .....IEC 61557-13: Class 1, ≤100 A/m

Electromagnetic Compatibility (EMC)

International .....IEC 61326-1: Industrial Electromagnetic Environment
CISPR 11: Group 1, Class B

Group 1: Equipment has intentionally generated and/or uses conductively-coupled radio frequency energy that is necessary for the internal function of the equipment itself.

Class B: Equipment is suitable for use in domestic establishments and in establishments directly connected to a low voltage power supply network which supplies buildings used for domestic purposes.

Emissions that exceed the levels required by CISPR 11 can occur when the equipment is connected to a test object.

Korea (KCC) ..... Class A equipment (Industrial Broadcast & Communications Equipment)

Class A: Equipment meets requirements for industrial electromagnetic wave equipment and the seller or user should take notice of it. This equipment is intended for use in business environments and not to be used in homes.

USA (FCC)..... 47 CFR 15 subpart B. This product is considered an exempt device per clause 15.103.

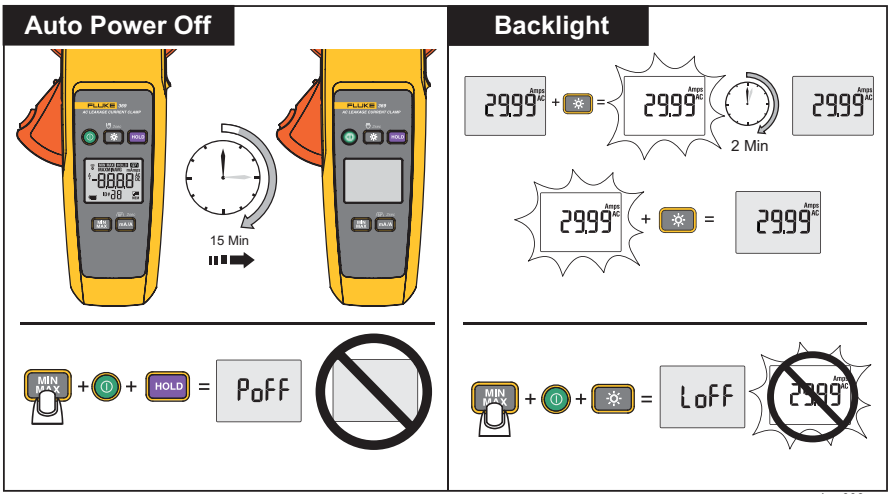
Safety Specifications

Safety

General ..... IEC61010-1: Pollution degree 2

Measurement ..... IEC61010-2-032: CAT III 600V

Product Functions



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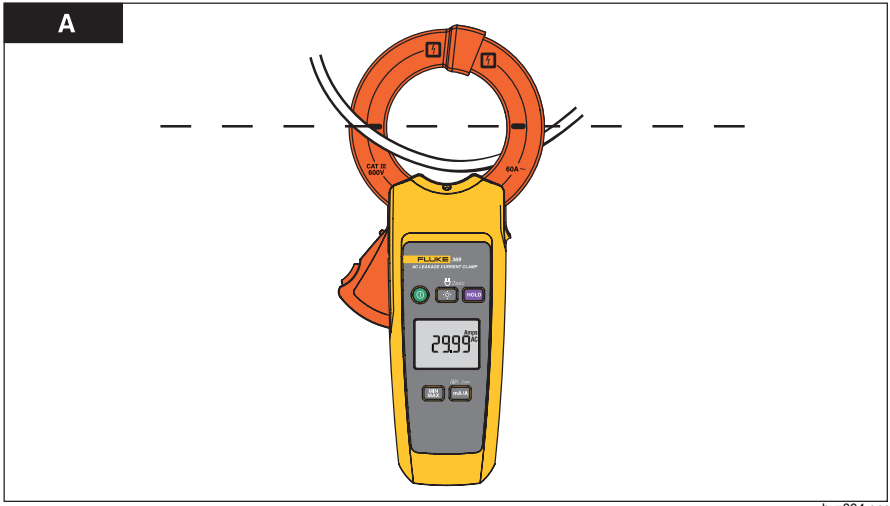
A
CAT III
600V
60A~
FLUKE
AC LEAKAGE CURRENT CLAMP
HOLD
29.99
Amps
AC
MIN
MAX
RANGE

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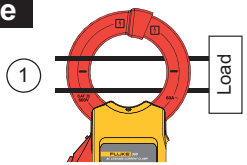
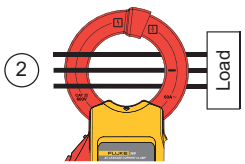
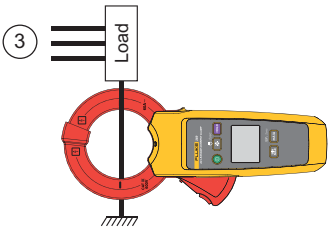
Measure



Single-Phase
Two-Wire Circuit

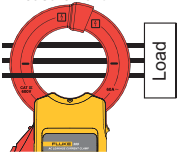


Single-Phase
Three-Wire or
Three-Phase
Three-Wire Circuit



Grounding Wire

• Example of Load Current Measurement



Insert only one of the wires through the jaws.

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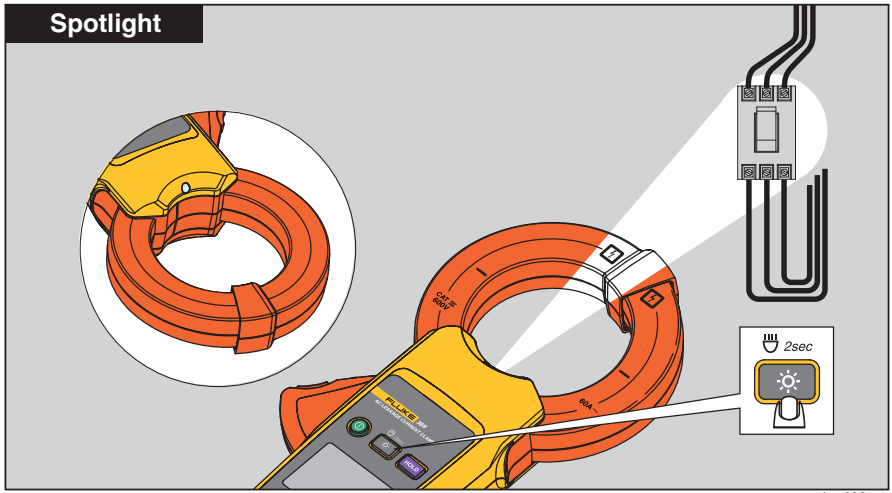
Spotlight
CAT III
600V
FLUKE 369
AC LEAKAGE CURRENT CLAMP
60A
HOLD
2sec

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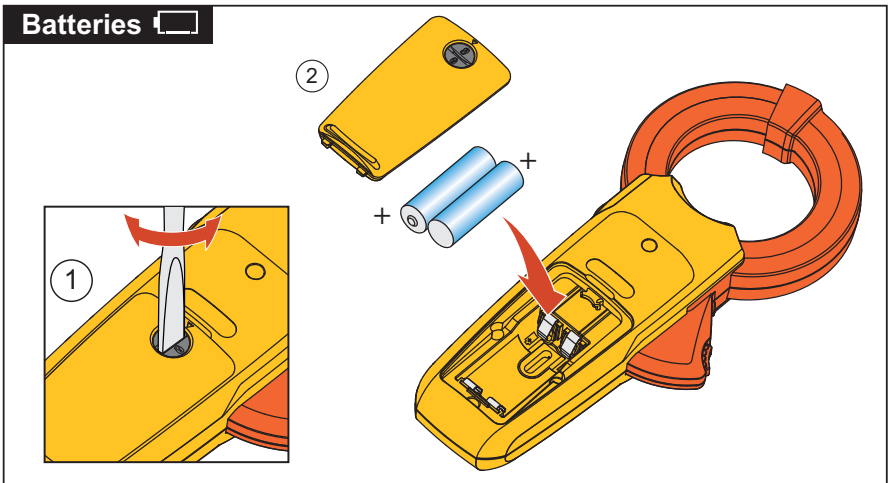

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