

FLUKE®

3014-PR

AC Current Clamp

Instruction Sheet









Introduction

The Fluke 3014-PR AC Current Clamp (the Clamp) is a compact ac current clamp designed specifically for the Fluke 1750.

Designed to meet the most stringent demands in industry and electrical contracting, it also meets the latest safety and performance standards.

Symbols

The table below lists the symbols used on the Clamp and/or in this instruction sheet.

Symbol	Description
	Do not dispose of this product as unsorted municipal waste. Go to Fluke's website for recycling information.
	Risk of Danger. Important Information. See manual.
	Hazardous Voltage. Risk of electric shock.
	Double insulation.
	Application around and removal from HAZARDOUS LIVE conductors is permissible.
	Underwriters Laboratories. Conforms to UL Canadian and U.S. standards.
	Complies with the relevant European standards.
	Conforms to relevant Australian standards.

PN 3039221

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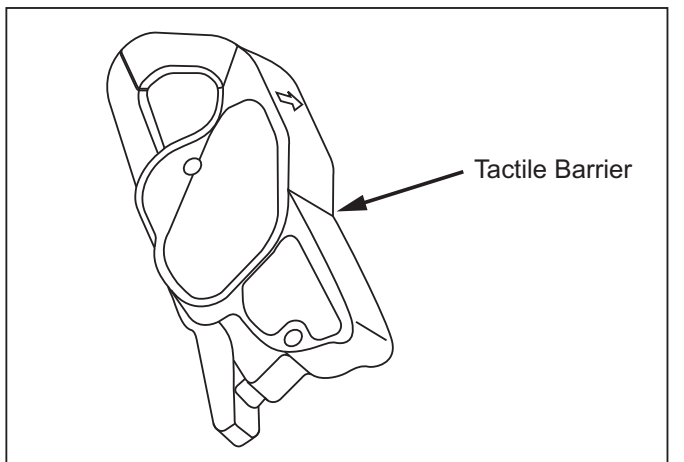
Safety Instructions

Please read this section carefully. It will familiarize you with the most important safety instructions for handling the Clamp. In this instruction sheet, a **Warning** identifies conditions and actions that pose hazard(s) to the user. A **Caution** identifies conditions and actions that may damage the test instruments.

Warning

The Clamp may only be used and handled by qualified personnel. To avoid personal injury, follow these precautions:

- **To avoid electric shock, use caution during installation; high voltages and currents may be present in circuit under test.**
- **Do not use the Clamp if damaged. Always connect to display device before it is installed around the conductor.**
- **Use the Clamp only as specified in the operating instructions; otherwise the safety features may not protect you.**
- **Adhere to local and national safety codes. Individual protective equipment must be used to prevent the shock and arc blast injury where hazardous live conductors are exposed.**
- **Before each use, inspect the Clamp. Look for cracks or missing portions of the housing or output cable insulation. Also look for loose or weakened components.**
- **Use caution when working with voltages above 60 V dc, 30 V ac rms or 42 V ac peak. Such voltages pose a shock hazard.**
- **Use of this equipment is designed to CAT III standards. CAT III equipment is designed to protect against the transients in the equipment in fixed equipment installations, such as distribution panels, feeders and short branch circuits, and the lighting systems in large buildings.**
- **Do not use the Clamp in wet environments or in locations that hazardous gases exist.**
- **Do not hold the Current Clamp anywhere beyond the tactile barrier, see Figure 1.**



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Figure 1. 3014-PR AC Current Clamp

Operating Instructions

1. Connect the Clamp to the 1750 current input jack. Verify that the 1750 has recognized that a current Clamp is connected.
2. Place the Clamp around the conductor under test.
3. Observe and take measurements as required. Positive output indicates that the current flow is in the direction shown by the arrow on the Clamp.

Cleaning

Clean the Clamp periodically by wiping it with a damp cloth and detergent. Do not use abrasive cleaners or solvents. Do not immerse the Clamp in liquids.

Specifications

Electrical Specifications

Operating Range	40 A
Measurement Range	0.1 to 40 A
Transformation Ratio	Voltage output
Output Signal	50 mV/A (2 V @ 40 A)

Range	Accuracy	Phase Shift
0.1 to 1 A	$\leq 2\%$ of Reading ± 1 mV	–
1 to 5 A	$\leq 1\%$ of Reading ± 1 mV	$\leq 3^\circ$
5 to 40 A	$\leq 1\%$ of Reading ± 1 mV	$\leq 2^\circ$
Reference conditions: 20 °C to 26 °C, 20 to 75 % RH, external magnetic field <40 A/m, 48 to 65 Hz sine wave, distortion factor less than 1 %, no dc component, no external current carrying conductor, test sample centered. Load impedance 1 M Ω .		

Overload	50 A for Continuous
Frequency Range	40 to 10 kHz (See Figure 2)
Crest Factor	3 @ 10 A rms with an error (due to CF) of 3 %
Working Voltage	600 V rms
Common Mode Voltage	30 V rms
Influence of Adjacent Conductor	<15 mA/A at 50 Hz
Influence of dc on ac signal	dc current <20 A, <5 %
Influence of Conductor Position in Jaw	0.5 % of mV output @ 50/60 Hz
Influence of Frequency	40 Hz to 1 kHz: 0.5 % of mV output 1 kHz to 10 kHz: 2 % of mV output

Mechanical Specifications

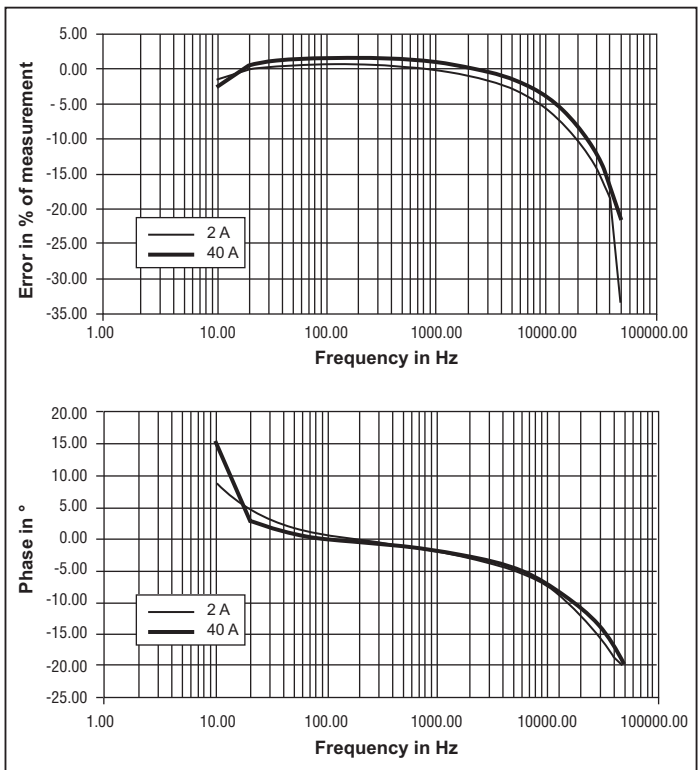
Dimensions	5.47 x 2.00 x 1.18 in. (139 x 51 x 30 mm)
Weight	180 g (6.5 oz)
Jaw Opening	0.83 in. (21 mm)
Maximum Conductor Size	
Cable	0.78 in. (20 mm)
Bus Bar	0.78 x 0.19 in. (20 x 5 mm)
Case Protection	IP 40 (IEC 60529)
Drop Test	1.0 m six sides to oak floor
Vibration	MIL-PRF-28800F
Polycarbonate Material	
Jaws	Polycarbonate Red UL 94 V0
Case	Polycarbonate ABS Gray: UL 94 V0
Opening Operations - Life	>50,000
Output	1 ft round 2 conductor cable w/4-pin Lemo connector

Environmental Specifications

Operating Temperature	14 ° to 131 °F (-10 ° to +55 °C)
Storage Temperature	-40 ° to 158 °F (-40 ° to +70 °C)
Altitude	Non-operating: 0 to 12,000 m Operating: 0 to 2000 m
Operating Relative Humidity	10 to 35 °C 85 % RH (without roll-off above 35 °C)
Influence of Temperature	≤150 ppm/°K, or 0.15 % of mV output per 10 °K
Influence of Humidity (10 to 90% RH)	≤0.2 % of mV output per 10 °K @ 18 °C to 28 °C

Safety Specifications

Electrical	Conforms to EN/IEC 61010 and 61010-2-032 600 V Cat. III, Pollution Degree 2
Electromagnetic Compatibility	EN 50081-1 Class B EN 50082-2 Electrostatic discharge; IEC 61000-4-2 Radiated field IEC 61000-4-3 Fast transients IEC 61000-4-4 Magnetic field at 50/60 Hz IEC 61000-4-8



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Figure 2. Frequency Response at 2 and 40 A

LIMITED WARRANTY AND LIMITATION OF LIABILITY

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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