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FLUKE®

i40s-PR 1750 40A

AC Current Clamp

Instruction Sheet

Introduction

The i40s-PR 1750 40A AC Current Clamp operates with the Fluke 1750 Power Recorder. It supplies accurate nonintrusive measurement of ac current. The probe has a current range from 0.05 A to 40 A. The frequency range is 40 Hz to 5 kHz. The clamp is approved for CAT III 600 V.

Contacting Fluke

To contact Fluke, call:

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Anywhere in the world: +1-425-446-5500

USA Service: 1-888-99-FLUKE (1-888-993-5853)

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

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

Safety Information

Safety Information

To prevent electrical shock or personal injury:

- Carefully read all instructions.
- Use the product only as specified, or the protection supplied by the product can be compromised.
- 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.
- Hold the product behind the tactile barrier.
- Before each use, examine the product. Look for cracks or missing pieces of the clamp housing or output cable insulation. Also look for loose or weakened components. Carefully examine the insulation around the jaws.
- Do not exceed the Measurement Category (CAT) rating of the lowest rated individual component of a product, probe, or accessory.
- Use the Clamp only on insulated conductors.
- Use caution around bare conductors or bus bars.
- Do not touch the conductor.
- Do not touch voltages > 30 V ac rms, 42 V ac peak, or 60 V dc.
- Do not use the product around explosive gas, vapor, or in damp or wet environments.

For more information about the category rating, see the *1750 Power Recorder Getting Started Guide*.

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Symbols

	Do not apply around or remove from HAZARDOUS LIVE conductors.
	Product is protected by double insulation.
	Risk of Danger. Important information. See Instruction Sheet.
	Risk of Electric Shock.
	Canadian Standards Association has certified that the product meets applicable U.S. and Canadian Standards.
	Conforms to relevant European Union directives.

Safety Specifications

Category Rating:	CAT III 600 V per IEC/EN61010-1, Pollution Degree 2
	Complies with U.S. and Canadian Standards CAN/CSA C22.2 No. 61010-1-04 and No. 61010-2-032-04; UL61010-1
	IEC 61010-1 2 nd Edition IEC 61010-02-032
EMC:	EN 61326-1, FCC for emission and immunity

Electrical Characteristics

Nominal current in	40 A ac r.m.s.
Overload	up to 200 A r.m.s.
Conductor position influence	<0.5 % of range at 50/60 Hz
Error due to adjacent conductor	≤15 mA / A at 50/60 Hz
Frequency range	40 Hz to 5 kHz (-3 dB)
Temperature coefficient	0.015 % of range / °C
Maximum working voltage (see Safety section)	600 V ac r.m.s. or dc
Crest Factor	≤3, add 0.7 % to accuracy
Output	50 mV/A

General Characteristics

Maximum conductor size	15 mm diameter, bus bar 15 x 17 mm
Cable length	2.5 m
Operating temperature range	-10 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
Operating humidity	15 % to 85 % r.h. (non condensing)
Dimensions	4.33 in x 1 in x 2 in (110 mm x 26 mm x 50 mm)
Weight	0.6 lb (0.28 kg)
Connector	LEMO / Redel 6 pin plug
Altitude	2000 m maximum

Accuracy (at 50 Hz)

Accuracy (48 Hz to 65 Hz)	
0.125 A to 2.5 A	±2.5 %
2.5 A to 12.5 A	±1.5 %
12.5 A to 40 A	±1.0 %

Phase Shift (48 Hz to 65 Hz)

0.125 A to 2.5 A	Unspecified
2.5 A to 40 A	<1.5 ° typical

Reference Conditions

Environment temperature range	+18 °C to +26 °C
Humidity	20 to 75 % r.h.
Current	sinusoidal waveform, 48 to 65 Hz, distortion factor: <1 %, no DC component
Load impedance for voltage output	≥1 MOhm, <100 pF

Measurements

- For the best measurement:
- Put the conductor in the center of the Current Clamp jaw.
 - Make sure that the Current Clamp is perpendicular to the conductor.
 - Do not measure while near other current carrying conductors.

Operation

 Warning

To prevent electrical shock or personal injury, hold the product behind the tactile barrier.

To use the Current Clamp:

1. Connect the clamp cable to the instrument.
2. Make sure that the measurement instrument is set to the correct range.
3. To open the Current Clamp jaw, push the release button toward the jaw.
4. Connect the Current Clamp jaws around the insulated conductor for measurement and release the button. Make sure that the release button is in the initial position to continue the circuit test.

Maintenance

 Warning

To prevent possible electrical shock or personal injury, do not use and disable the product if it is damaged.

If the Current Clamp does not correctly operate, use these steps to help isolate the problem:

1. Examine the jaw for a clean mating surface. If there is unwanted material, the jaw will not close correctly and will cause measurement errors.
2. Make sure that the function selection and range are correct on the Multimeter and adjusted to the sensitivity of the Current Clamp.

Note

A damaged clamp under warranty will be repaired or replaced (at Fluke's discretion) at no charge.

Cleaning

If necessary, clean the case with a damp cloth and weak detergent.

 Caution

To prevent damage to the Current Clamp, do not use abrasives or solvents to clean the clamp.

Open the jaws and clean the magnetic pole pieces with a lightly oiled cloth. Do not let rust or corrosion collect on the magnetic core ends.