

Fluke

i410/i1010

AC/DC Current Clamp

Instruction Sheet



Shown with Fluke 83 Series III DMM

Purchased in 2001 for ME/ES 308 – Instrumentation & Measurements Course.

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FLUKE®

i410/i1010

AC/DC Current Clamp

Instruction Sheet

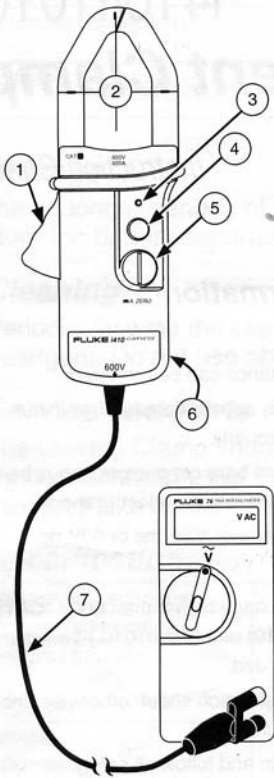
Read First: Safety Information

- Avoid working alone to ensure that assistance can be rendered.
- Do not use the clamp if the clamp or leads appear damaged, or if you suspect that the clamp is not operating properly.
- Use extreme caution when working around bare conductors or bus bars. Accidental contact with the conductor could result in electric shock.
- Use caution when working with voltages above 30V rms or 60V dc. Such voltages pose a shock hazard.
- Never use the clamp on a circuit with a voltage higher than 600V (CAT. III) or a frequency higher than 400 Hz (i410) or 2 kHz (i1010.) The clamp may be damaged if these limits are exceeded.
- Use the clamp only as specified in this instruction sheet; otherwise, the protection provided by the clamp may be impaired.
- Read the operating instructions before use and follow all safety information.
- CAT. III - Industrial Locations (IEC 1010-1).

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Features and Connections



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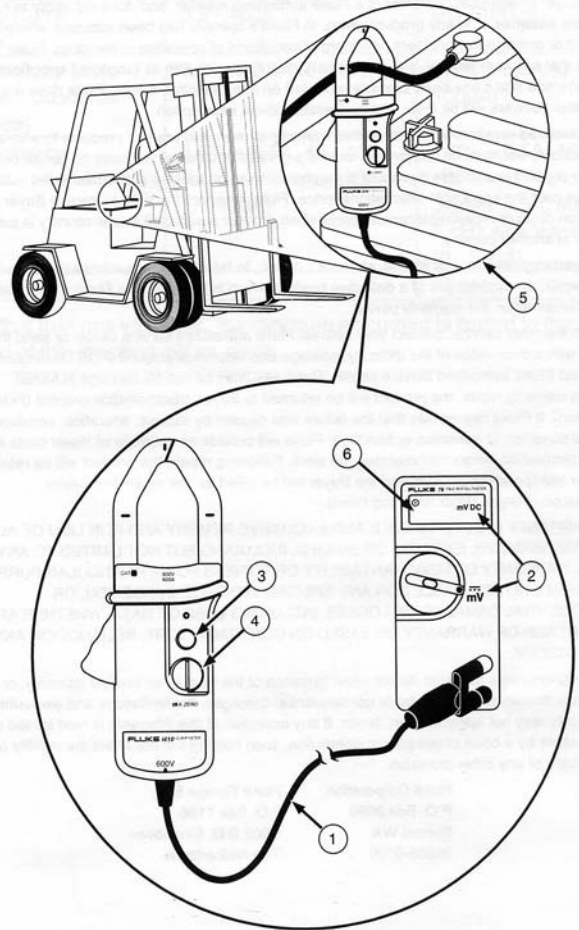
- ① Jaw Lever
- ② Jaw Centering Marks
- ③ ON Indicator
- ④ ON/OFF Switch
- ⑤ Zero Adjust
- ⑥ Battery Access
- ⑦ Output Cable

Minimum voltmeter requirements:

- Accepts safety-shrouded banana plugs.
- Can display 1 mV (0.1 mV preferred)
- Accuracy $\geq 0.75\%$
- Input impedance $\geq 1 \text{ M}\Omega$, $\leq 100 \text{ pF}$.

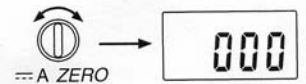
Measuring DC Current

Maximum: 400A dc (i410) or 1000A dc (i1010)



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- ① Connect to voltmeter.
- ② Select mV dc.
- ③ Set ON.
- ④ Adjust ZERO (jaws empty.)

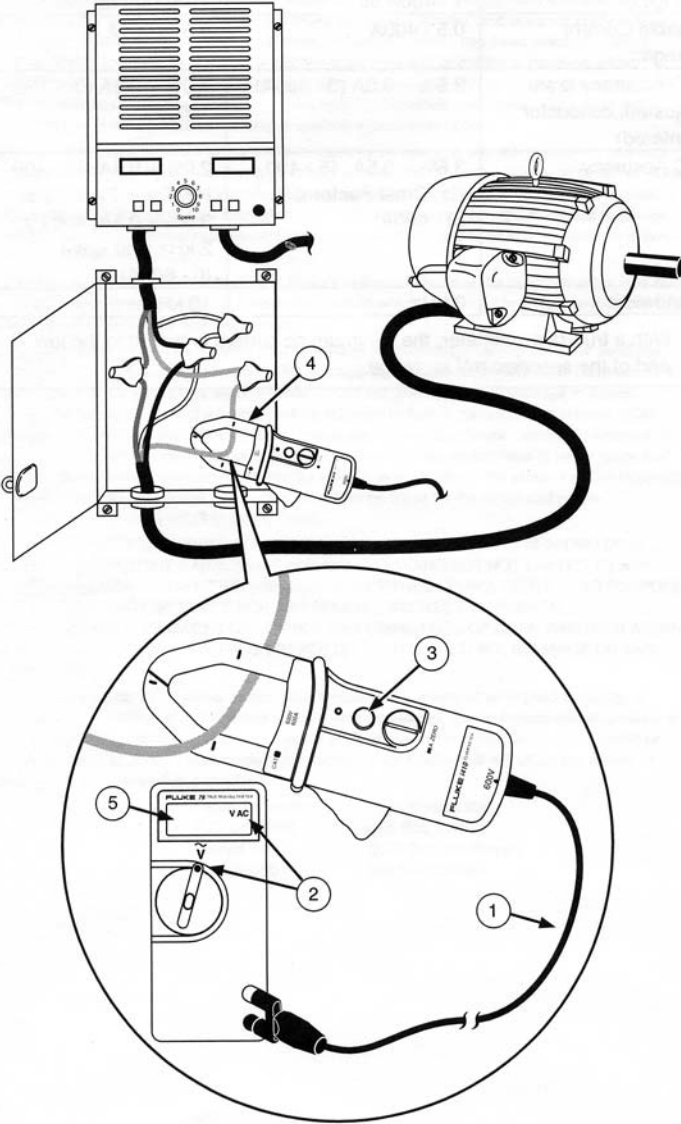


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- ⑤ Clamp and center around conductor.
- ⑥ Read voltmeter (1 mV = 1A.)

Measuring AC Current

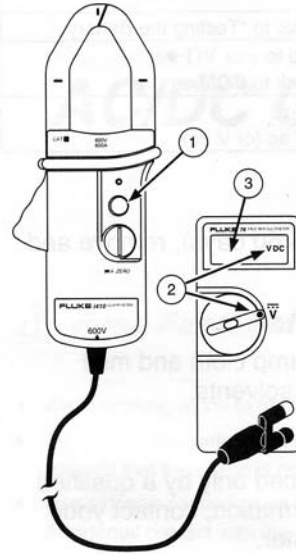
Maximum: 400A ac rms (i410) or 600A ac rms (i1010)



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- ① Connect to voltmeter.
- ② Select mV ac (or V ac, but resolution may be limited to 1A.)
- ③ Set ON.
- ④ Clamp and center around conductor.
- ⑤ Read voltmeter (1 mV = 1A.)

Testing the Battery

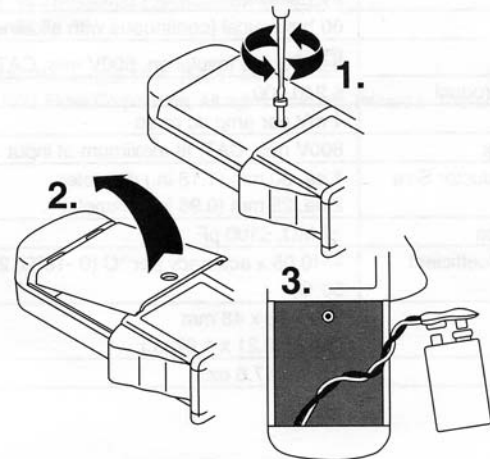


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- ① Set OFF.
- ② Select V dc.
- ③ $\leq 7.0V$ dc = replace battery.
(Voltmeter input impedance $\geq 1 M\Omega$)

Replacing the Battery

For specified battery life, use an alkaline battery.



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If the Current Clamp Does Not Work

Check	Correct
Battery = OK?	Refer to "Testing the Battery."
Voltmeter connections?	Red to + or $V\Omega$ \blacktriangleright Black to COM
Voltmeter function/range?	mV dc mV ac (or V ac)

Storage

During longer periods of non-use (> 60 days), remove and store the battery separately.

Cleaning

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

Service and Parts

The Current Clamp should be serviced only by a qualified service technician. For service information, contact your nearest Fluke dealer or service center.

Specifications

Operating Temperature	-10 to 50°C (14 to 122°F)
Storage Temperature	-20 to 60°C (-4 to 140°F)
Relative Humidity	0 to 95% (0 to 30°C) 0 to 75% (30 to 40°C) 0 to 45% (40 to 50°C)
Altitude	
Operating	0 - 2000m
Non-operating	0 - 12000m
Battery Type	9V (alkaline)
Battery Life	60 hrs typical (continuous with alkaline)
Safety	<input checked="" type="checkbox"/> Double Insulation, 600V rms, CAT. III
Current x Hz Product	≤ 240,000
Output Signal	1 mV per amp dc or ac
Working Voltage	600V rms, CAT. III maximum at input
Maximum Conductor Size	1 ea. 30 mm (1.18 in.) diameter 2 ea. 25 mm (0.98 in.) diameter
Load Impedance	≥1 MΩ, ≤100 pF
Temperature Coefficient	+/- (0.05 x accuracy per °C (0 -18°C, 28-50°C))
Size	209 x 78 x 48 mm (3.09 x 8.21 x 1.87 in.)
Weight	0.5 kg (17.6 oz.)

	i410	i1010
Specified Current Range:	1 - 400A ac rms * 1 - 400A dc	1 - 600A ac rms * 1 - 1000A dc
Usable Current Range:	0.5 - 400A	0.5 - 1000A
DC Accuracy (zero adjusted, conductor centered)	3.5% + 0.5A (0 - 400A)	2.0% + 0.5A (0-1000A)
AC Accuracy	3.5% + 0.5A, 45 - 400 Hz, Crest Factor ≤ 3. (0 - 400A)	2.0% + 0.5A, 45 - 400 Hz, Crest Factor ≤ 3. 3.0% + 0.5A, 400 Hz - 2 kHz sine wave. (0 - 600A)
Bandwidth	3 kHz	10 kHz

* With a true-rms voltmeter, the minimum ac current is limited to the low end of the specified mV ac range.

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