

INTRODUCING THE CURRENT PROBE

The Fluke 80i-110s is a clamp-on AC/DC Current Probe that reproduces current waveforms found in modern commercial and industrial power distribution systems. The probe's performance is optimized for accurate reproduction of currents at line frequency and up to the 50th harmonic waveform. The 80i-110s is also compatible with any instrument capable of millivolt measurements. The Current Probe (shown in Figure 1) provides the following benefits:

- Accurate AC, DC and AC+DC current measurements for Electrical, Electronic and Automotive applications.
- Shielded for high noise immunity around electronic motor drives and ignition systems.
- Wide measurement range from 50 milliamps to 100 amps, useful to 10 milliamps.
- Jaw shaped for easy access to cramped spaces.
- Safety-designed 600 volt insulated BNC - compatible with Fluke ScopeMeter® test tools, Power Harmonic analyzers, and oscilloscopes.
- Selectable output of 10 millivolts per 1 amp for the 100 A range, and 100 millivolts per 1 amp for the 10 A range.

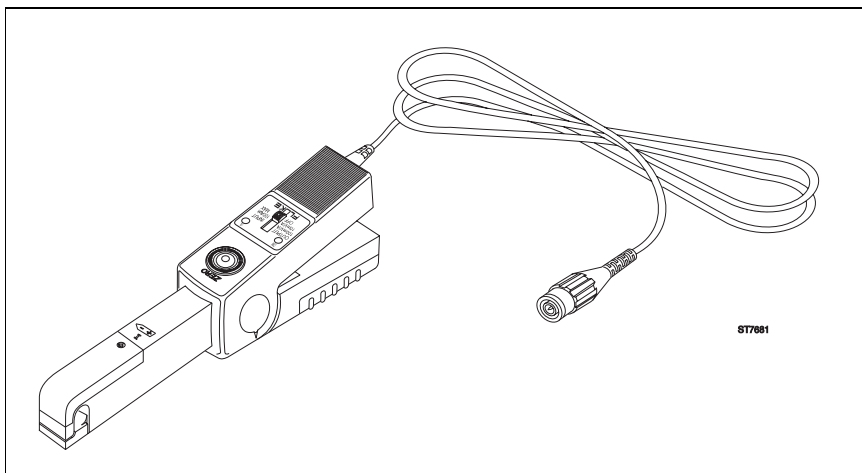



Figure 1. 80i-110s AC/DC Current Probe








USING THE CURRENT PROBE SAFELY

ATTENTION

Carefully read the following safety information before attempting to operate or service the Current Probe.

-  Never use the probe on circuits rated higher than 600V in Installation Category II (CAT II) or 300V in Installation Category III (CAT III). (See "Safety Specifications".) Use extreme caution when clamping around uninsulated conductors or bus bars.
- Keep your fingers off the probe jaws.
- Check the magnetic mating surfaces of the probe jaws; these should be free of dust, dirt, rust, and other foreign matter.
- Do not use a probe that is cracked, damaged, or has a defective cable. Such probes should be made inoperative by taping the clamp shut to prevent operation.

In this Users Manual, a **WARNING** identifies conditions and actions that pose hazard(s) to the user. A **Caution** identifies conditions and actions that may damage the current probe. International electrical symbols used are explained below.

	DC - Direct Current		Caution (see explanation in manual)
	AC - Alternating Current		Equipment protected throughout by DOUBLE INSULATION or REINFORCED INSULATION
	Earth		Recycling
	Conformité Européenne		

The 80i-110s is designed to meet the requirements of IEC Publication 1010 and other safety standards (see "Safety Specifications"). Follow all warnings to ensure safe operation.

Use of this equipment in a manner not specified herein may impair the protection provided by the equipment.

ELECTRICAL SPECIFICATIONS

All Electrical Specifications are valid at a temperature of 23°C ± 3°C (73 °F ± 5 °F).

Current Ranges:

- 0 to 10A dc or ac peak
- 0 to 100A dc or ac peak

Output Signals:

- 10A range: 100 mV/A
- 100A range: 10 mV/A



Working voltage (Clamps jaws to Ground):

- 600V ac rms on Installation Category II per IEC 1010-1 circuits.
- 300V ac rms on Installation Category III per IEC 1010-1 circuits.



Floating Voltage (Output cable and connector to Ground):

- 600V ac rms on Installation Category II per IEC 1010-1 circuits.
- 300V ac rms on Installation Category III per IEC 1010-1 circuits.

Basic Accuracy (DC to 1kHz):

Input Current (DC or AC peak)	Error (after zero check)	
	100 mV/A	10 mV/A
0 to 10A	<3% of reading +50 mA	-
0 to 40A	-	<4% of reading +50 mA
40 to 80A	-	<12% of reading +50 mA
80 to 100A	-	<15% of reading

Extended Accuracy:

For other frequencies, refer to the appropriate input current range and **add the error listed below to the "Basic Accuracy" error.**

Frequency	Additional Error	
	100 mV/A	10 mV/A
1 to 5 kHz	3%	3%
5 to 20 kHz	12%	12%
>20 kHz	not specified	not specified

Input Load Impedance (of host instrument):

>1 M Ω in parallel with up to 100 pF.

Useful Bandwidth (-3 dB):

0 to 100 kHz

Rise or Fall Time:

<4 μ sec.

Output noise level:

10 mV/A typ. 480 μ V pk-pk

100 mV/A typ. 3 mV pk-pk

Max. non destructive current:

0 to 2 kHz 140A peak

2 to 10 kHz 110A peak

10 to 20 kHz 70 A peak

20 to 50 kHz 30A peak

50 to 100 kHz 20A peak

Temperature coefficient:

2000 ppm/ $^{\circ}$ C max. for temperature from 0 to 50 $^{\circ}$ C (32 to 132 $^{\circ}$ F)

GENERAL SPECIFICATIONS

Dimensions:

67 x 231 x 36 mm (2.6 x 9.1 x 1.4 inches)

Weight:

330g (11.6 oz.), battery included

Output Cable:

1.6 meters (63 inches)

Maximum Conductor Size:

∅ 11.8 mm (.46 inch)

Maximum Jaw Opening:

12.5 mm (.49 inch)

Temperature:

operating: 0 to 50°C (32 to 122°F)

nonoperating: -30 to 70°C (-22 to 158°F)

Relative Humidity (Operating):

0 to 85% (0 to 35°C; 32 to 95°F)

0 to 45% (35 to 50°C; 95 to 122°F)

Altitude:

operating: 0 to 2000 meters (0 to 6560 feet)

nonoperating: 0 to 12000 meters (0 to 40000 feet)

Demagnetize Probe:

Open and close the probe jaws several times