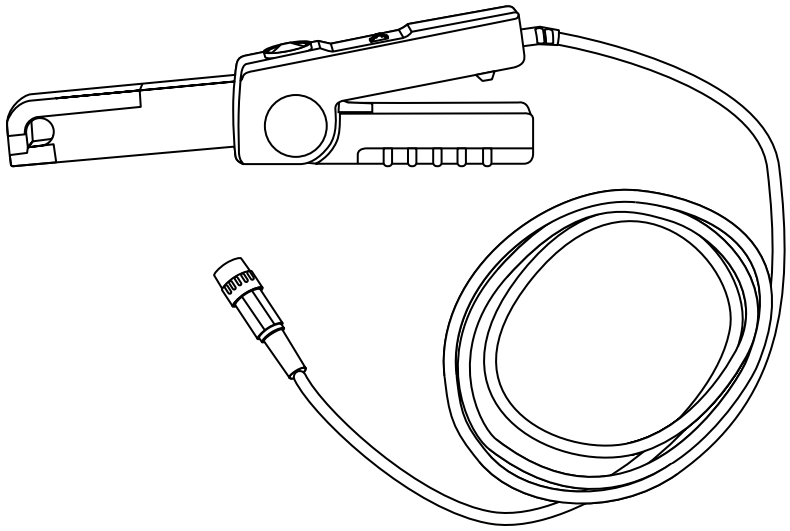
Rev. A-9/2002

FLUKE®

80i-110s AC/DC Current Probe

The ideal current probe for Fluke ScopeMeter® Test Tools

Technical Data



Accurate current measurements become more and more critical when troubleshooting electric, electronic, and automotive circuits. The Fluke 80i-110s AC/DC Current Probe is designed to provide you with safe, high accuracy measurements for a wide range of applications.

The specially designed built-in safety features such as the 600 V rms rating at the input jaws, output cable, and BNC connector enhance work safety in industrial and commercial power distribution systems.

The probe is shielded for high noise immunity, to prevent unwanted noise when troubleshooting around noise generating devices like adjustable speed motor drives and ignition systems.

The 80i-110s accurately reproduces current waveforms as they occur. Connect the clamp to a Fluke ScopeMeter Test Tool or other waveform recording device like a Fluke Power Harmonics Analyzer, to clearly see distorted waveforms that result from non-linear loads such as computers, adjustable speed motor drives, and electronic ballasts for fluorescent lighting.

Current clamps, not specifically designed for oscilloscopes, may add distortion to the actual signal present in the system under test. This makes it difficult to get an accurate waveform measurement.

The wide measurement range from 50 milliamps to 100 Amps with a high fidelity millivolt output gives you full advantage of the high resolution oscilloscope displays. This gives you the true picture of your current situation, and allows useful measurements as low as 10 milliamps.

The broad band frequency response of the Fluke 80i-110s AC/DC Current Probe from dc to 100 kHz supports a wide range of applications where the probe can be used. The probe can be used to track down leakage currents discharging car batteries or to measure dc currents in an Uninterruptible Power Supply (UPS), that uses a battery backup system.

With its narrow jaw design, the Fluke 80i-110s makes it easy to take measurements in tight spots.

Specifications

Electrical specifications

Current ranges:
0 to 10 A dc or ac peak
0 to 100 A dc or ac peak
Output signals:
10 A range: 100 mV/A
100 A range: 10 mV/A
Working voltage (clamp jaws to ground):
600 V ac rms on Installation Category II per IEC 1010-1 circuits.
300 V ac rms on Installation Category III per IEC 1010-1 circuits.

Floating voltage (output cable and connector to ground):
600 V ac rms on Installation Category II per IEC 1010-1 circuits.
300 V ac rms on Installation Category III per IEC 1010-1 circuits.

Basic accuracy (dc to 1 kHz)

Input current dc or ac peak	Error (after zero check)	
	100 mV/A	10 mV/A
50 mA to 10 A	< 3 % of reading + 50 mA	–
50 mA to 40 A	–	< 4 % of reading + 50 mA
40 to 80 A	–	< 12 % of reading + 50 mA
80 to 100 A	–	< 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."

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

Phase shift, dc to 65 Hz:
10 A range < 1.5 degree
100 A range < 1 degree
Input load impedance (of host instrument):
> 1 MΩ in parallel with up to 100 pF
Useful bandwidth (-3 dB):
0 to 100 kHz
Rise or fall time: < 4 msec
Output noise level:
10 mV/A typ. 480 mV pk-pk
100 mV/A typ. 3 mV pk-pk
Maximum non-destructive current:
0 to 2 kHz 140 A peak
2 to 10 kHz 110 A peak
10 to 20 kHz 70 A peak
20 to 50 kHz 30 A peak
50 to 100 kHz 20 A peak
Temperature coefficient:
2000 ppm/°C max. for temperature from 0 °C to 50 °C (32 °F to 132 °F)

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

General specifications

Dimensions:
67 x 231 x 36 mm
(2.6 x 9.1 x 1.4 inches)
Weight: 330 g (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 °C to 50 °C (32 °F to 122 °F)
Non-operating: -30 °C to 70 °C (-22 °F to 158 °F)
Relative humidity (operating):
0 to 85 % (0 °C to 35 °C; 32 °F to 95 °F)
0 to 45 % (35 °C to 50 °C; 95 °F to 122 °F)
Altitude:
Operating: 0 to 2,000 meters (0 to 6,560 feet)
Non-operating: 0 to 12,000 meters (0 to 40,000 feet)

Safety specification

Designed to meet the requirements of IEC 1010 and CSA-C22.2 No. 1010.1: Installation Category II, Working Voltage 600V, Pollution Degree 2. Installation Category III, Working Voltage 300V, Pollution Degree 2.

Installation (Overvoltage) Category II refers to local level, appliances, and portable equipment.

Installation (Overvoltage) Category III refers to distribution level and fixed installation circuits inside a building electrical service entrance.

Designed to meet the requirements of UL1244, Protection Class II Double Insulation.

Battery information

Battery: 9 volt, IEC 6LR61
Consumption: 8.6 mA typical; 12 mA maximum
Service life:
55 hours typical, when Alkaline IEC 6LR61 is used
40 hours minimum, when Alkaline IEC 6LR61 is used
Battery indicator (ON):
Green LED dims when battery voltage is below 6.5V
Overload indicator (OL):
Red LED indicates that waveform or impulse is out of range

Instrument compatibility

The 80i-110s is compatible with any Fluke ScopeMeter Test Tool, Power Harmonics Analyzer, Oscilloscope, Multimeter, or other voltage measurement device that has the following features:

- BNC input connector. A BNC-to-banana adapter (order PM 9081/001 from Fluke) can also be used with standard inputs on a digital multimeter (DMM).
- Input accuracy of 2 % or better to take full advantage of the accuracy of the probe.
- Input impedance of greater than or equal to 1 MΩ in parallel with a maximum of 100 pF.
- A passband of more than four times the frequency of the waveform to be measured.

Warranty

One-year warranty

Ordering information

Model
80i-110s AC/DC Current Probe

Fluke. *Keeping your world up and running.*