Current Probes
Agilent 1147A High Bandwidth ac/dc Current

- **General purpose, high-frequency current probing**
- **ac, dc currents measured simultaneously**
- **dc to 50 MHz bandwidth**
- **15 A continuous, 50 A peak dc and ac pulse current**

Accurate Current Measurements Without Breaking the Circuit

The 1147A is a wide bandwidth, dc to 50 MHz, current probe. The probe offers flat frequency response across the entire dc to 50 MHz bandwidth, low noise (< 2.5 mArms) and low-circuit insertion loss, making it ideal for general-purpose, high-frequency current probing in lab and bench environments. This probe is the best choice for measuring steady state or transient current of motor drives, switching power supplies, inverters, controllers, disk drives, LCD displays, and current amplifiers driving inductive loads.

The probe's hybrid technology includes a Hall Effect device to sense the dc current and a current transformer to sense the ac current, making an electrical connection to the circuit unnecessary. Using split core construction, the probe easily clips on and off of a conductor up to 5 mm in diameter.

A Degauss function allows the removal of any residual magnetism that has built up in the magnetic core due to power on/off switching or excessive input. In addition, voltage offset or temperature drift on the probe can be easily corrected by using the zero adjustment dial.

The 1147A is compatible with the AutoProbe interface, which completely configures the oscilloscope for the probe. Probe power is provided by the scope, so there is no need for an external amplifier or power supply. A snap-on BNC connector simplifies connecting the probe to the scope.

Figure 5.4. Agilent 1147A 15 A rated current, 50 A peak current.

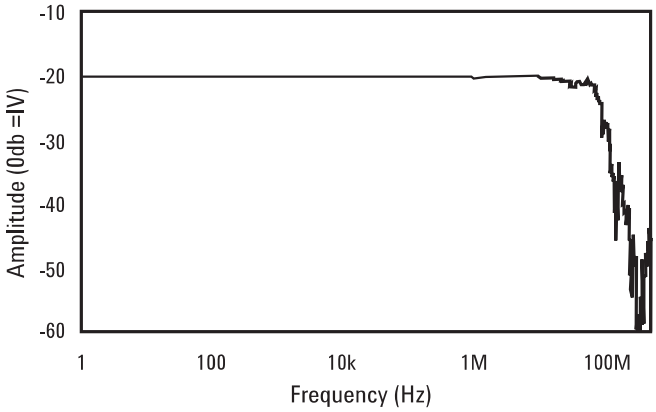

Figure 5.5. Frequency response chart showing the accuracy of the 1147A for probing wide bandwidth currents.

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Operating Characteristics

Bandwidth (–3 dB)	dc to 50 MHz
Rise time[1]	7 ns
Accuracy*	±1% of reading ±1 mV
Maximum continuous current	15 A (acrms + dc) Refer to derating curves above 5 kHz.
Maximum peak current	50 A for pulse width ≤10 µs
Probe sensitivity	0.1 V/A
Noise	≤2.5 mArms with 20 MHz bandwidth limiting
Effect of external magnetic fields	Equivalent to ≤20 mA (for a 400 A/m magnetic field dc to 60 Hz)
Temperature coefficient	±2% or less (0° C to 40° C)
Maximum measurable cable diameter	5 mm (0.2 inch)
Sensor cable length	1.5 m (59 inch)

1 Rise time is calculated as 0.35/bandwidth.

* Denotes warranted specification for the N2774A probe. All others are typical. Valid for 23° C ± 3° C (73° F ± 5° F), at least 30 minutes after power on. Requires 1 MΩ termination.

Ordering Information

Part #	Description	Quantity
1147A	50 MHz current probe	1
N2774A	50 MHz current probe. Same as 1147A, only with standard BNC scope connection. Use with 54852A/53A/54A/55A and DSO80000 models along with E2697A high-impedance adapter.	1
N2775A	Probe power supply for N2774A	1