Agilent Technologies 34134A AC/DC DMM Current Probe

Product Overview

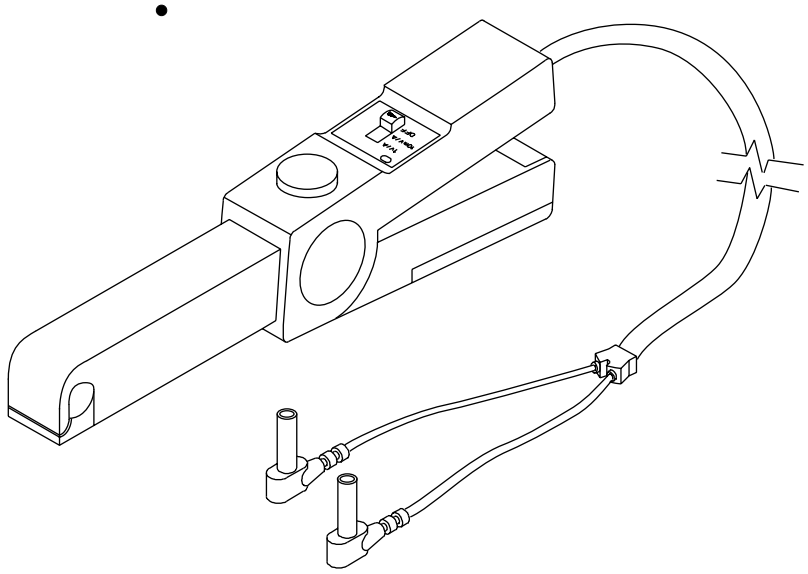

Figure 1. The Agilent 34134A AC/DC DMM current probe. The narrow jaw is designed for optimum use in crowded wiring in industrial and automotive environments.

The Agilent Technologies 34134A current probe measures low DC or AC from 10 mA to 50 A DC, 40 A AC. This battery-powered clamp-on probe can be used with digital multimeters, voltmeters, or other voltage-measuring instruments. The probe jaws clamp around the conductor under test, allowing current measurements without breaking the circuit. Hall sensor technology senses the magnetic field produced by the current measured and generates a millivolt DC or AC output signal. The narrow jaw is designed for optimum use in crowded wiring in industrial and automotive environments.

Compatibility

The 34134A current probe is compatible with any DMM, or other voltage measuring instrument which has the following features:

- Range and resolution capable of displaying 1 mV of input.
- Voltmeter accuracy (uncertainty) of 0.75% or better to take full advantage of the accuracy of the probe.
- Minimum input impedance of 100 kΩ (1 V/A range) or 10 kΩ (10 mV/A range).
- Input jacks that accept 4mm shrouded banana plugs.

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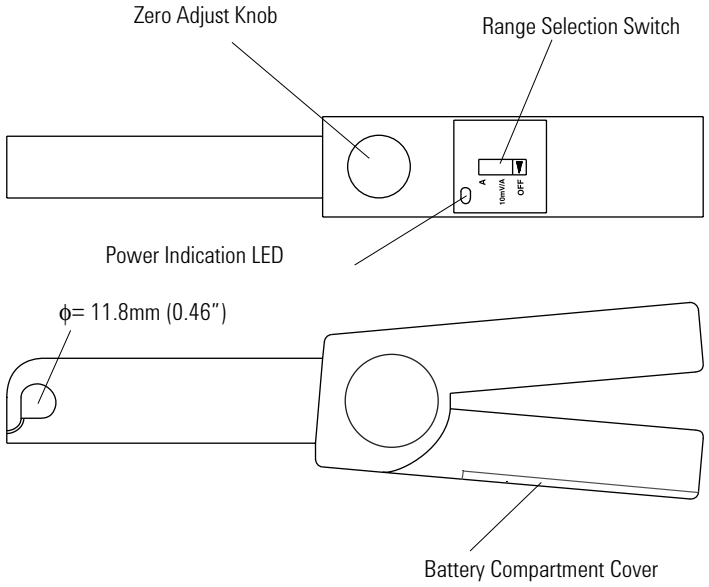

Figure 2. Agilent 34134A current probe control and connector identification

Specifications and Characteristics

Operating and environmental characteristics of the 34134A current probe are as shown below

Electrical Specifications

	1 V/A Range (1 mV/mA)	**10 mV/A Range**
Current Range	DC: 10 mA to 2 A AC: 10 mA to 1.5 A	DC: 100 mA to 80 A AC: 100 mA to 60 A
Output Signal (AC/DC)	1 mV/mA (2 V @ 2 A)	10 mV/A
Accuracy*	±2% reading ±5mA	500 mA to 50 A DC/40 A AC: ±4% reading ±20 mA 50 to 80A DC: ±12% reading 0 to 60A AC: ±12% reading
Frequency Range	DC to 8 kHz @ –3 dB	DC to 8 kHz
Phase Shift	DC to 65 Hz: 1°	DC to 65 Hz: 1°
Minimum Input Resistance of Instrument	100 kΩ	100 kΩ
Noise	DC to 1 Hz: 1.5 mV 1 Hz to 10 kHz: 14 mV 0 kHz to 100 kHz: 18 mV	DC to 1 Hz: 15µV 1 Hz to 10 kHz: 140µV 0 kHz to 100 kHz: 180µV
Slew Rate @ 5 A	120 mV/ µs	5.5 mV/ µs

* Accuracies are given for an ambient temperature of 23 °C ±3 °C, relative humidity of 20 to 75%, conductor centered in jaw window, probe zeroed, no hysteresis in DC, DC to 40 to 100Hz sine wave (1mV/mA range) or DC and 40 to 1 kHz sine wave (10mV/A range), 1 minute warm-up, battery at 9V, appropriate load impedance, magnetic field <40A/m and no common mode.

Typical Frequency Response Curve

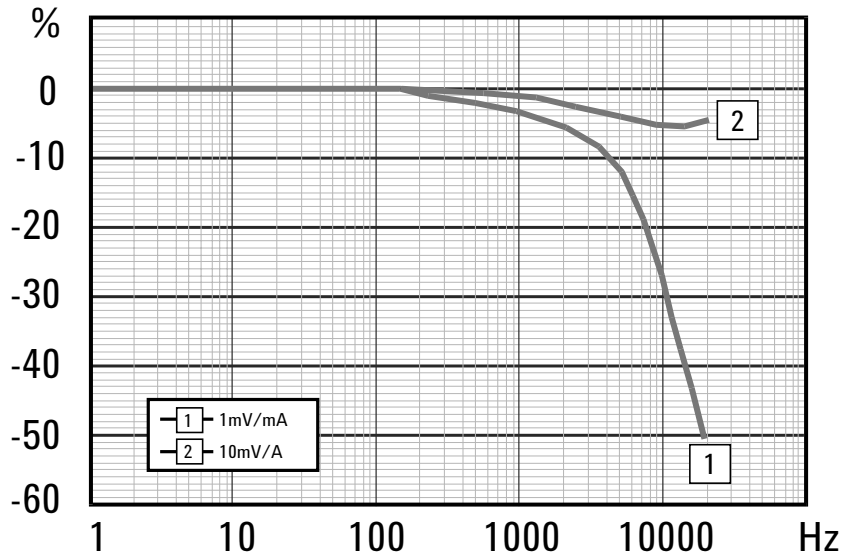

Figure 3. Voltage vs Frequencey Response Curve

Environmental Characteristics

Operating Temperature	0 to 50°C
Storage Temperature	–30 to 80°C
Operating Relative Humidity	0 to 50°C, 0 to 85% relative humidity
Temperature Coefficient	800 ppm per °C +10 mA/°C typical from –10 to 50°C
Altitude	Operating: 0 to 2000 m Non-operating: 0 to 12,000 m

Mechanical Characteristics

Zero Adjustment	20 turn potentiometer
Maximum cable diameter	11.8 mm
Dimensions	67 x 231 x 36 mm
Weight	330g with battery
Color	Grey
Material	Fiberglass charged polycarbonate
Output Cable	1.5m double insulated lead with shielded banana plugs

Safety Specifications

Working voltage	600 V CAT III
Case protection	IP20 per IEC 529
Drop test	1m according to IEC 68-2-32
Mechanical shock	100 G: test per IEC 68-2-27
Vibration	Test per IEC 68-2-6 frequency range 10 Hz to 55 Hz, amplitude: 0.15mm

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