Product

CT6705 Current Probe

Headline

AC/DC Fluxgate Current Probe, 500 A / 15 MHz

Short Description

AC/DC current probe with fluxgate sensing, 500 A rated current, ±800 A peak, DC to 15 MHz bandwidth, 10 mV/A output, BNC connector, 23.3 ns rise time, ±0.5 % rdg. ±1 mV accuracy, overload indication

Banner Specs

- 500 A rms rated current
- DC to 15 MHz bandwidth
- Accuracy: ±0.5 % rdg. ±1 mV
- Standard BNC output for oscilloscopes

Applications

- Current measurements in high current power electronics
- Analysis of inverters and converters
- Measurements on SiC and GaN inverter circuits
- Switching loss analysis of power modules
- Development and testing of EV, railway and industrial drives

Model	Rated current / ranges	Bandwidth	Rise time	Max. conductor Ø	Sensing method
CT6711	0.5 / 5 / 30 A	DC–120 MHz	≤ 2.9 ns	max. φ5 mm	Hall element
CT6710	0.5 / 5 / 30 A	DC–50 MHz	≤ 7.0 ns	max. φ5 mm	Hall element
CT6701	5 A	DC–120 MHz	≤ 2.9 ns	max. φ5 mm	Hall element
CT6700	5 A	DC–50 MHz	≤ 7.0 ns	max. φ5 mm	Hall element
3276	30 A	DC–100 MHz	≤ 3.5 ns	max. φ5 mm	Hall element
3273-50	30 A	DC–50 MHz	≤ 7.0 ns	max. φ5 mm	Hall element
CT6704	200 A	DC–30 MHz	≤ 11.6 ns	max. φ20 mm	Fluxgate
CT6705	500 A	DC–15 MHz	≤ 23.3 ns	max. φ20 mm	Fluxgate

Product Description

The HIOKI CT6705 is a wide-bandwidth AC/DC current probe for high-current measurements with oscilloscopes. For this model, HIOKI relies on the fluxgate sensing principle known from power measurement to reduce DC offset drift under temperature changes and self-heating. The extended frequency derating range supports high-current measurements with high-

frequency signal components, so current waveforms can be captured with stable signal behavior over long measurement runs.

The CT6705 measures currents up to 500 A rms with a maximum peak current of ±800 A. Its frequency range extends from DC to 15 MHz. Rise time is 23.3 ns or less. The measurement signal is output at 10 mV/A via a standard BNC output and can be connected directly to oscilloscopes, Memory Recorders and other DAQ systems with a BNC input.

Signal stability under temperature changes and at high frequencies

Fluxgate detection stabilizes the DC and low-frequency component of the measurement signal. The offset temperature coefficient is specified at ±0.1 mV/°C, so the measurement signal shows only very low drift under changing ambient temperatures and self-heating. The probe is specified for operating temperatures from −10 °C to +50 °C.

The usable frequency range at high currents is not defined by bandwidth alone, but also by the probe's frequency derating characteristics. The CT6705 maintains its full rated current of 500 A rms up to 10 kHz. Its optimized magnetic and thermal design reduces heating caused by high-frequency current components, and higher currents can therefore be measured across a wider frequency range within the specified derating limits.

Connecting to measurement systems

The CT6705 outputs the measurement signal at 10 mV/A via a standard BNC output and can be connected to oscilloscopes, Memory Recorders and DAQ systems with a BNC input. For detailed current waveforms, fast transients and longer measurement sequences, pairing the probe with a high-resolution measurement system is recommended, for example a HIOKI Memory Recorder such as the MR6000.

Power is supplied through the probe's 2-pin LEMO connector, either with the HIOKI 3269 Power Supply or directly from the MR6000 when the Z5021 Probe Power Unit is installed. Up to three CT6705 probes can run from a single 3269, and up to five from an MR6000 with the Z5021 installed.

For measurement preparation, the CT6705 has a demagnetization function and automatic zero adjustment. The CT6705 is developed and manufactured at HIOKI's own factory in Japan and extends a current sensor portfolio that has focused for decades on precise, stable AC/DC current measurement for laboratory and R&D work.

What's in the box

- CT6705 with hard shell case
- Instruction manual
- Operating precautions

Related Products

- 3269 Power Supply
- CT6704 Current Probe
- CT6711 Current Probe
- CT6710 Current Probe
- CT6701 Current Probe

- CT6700 Current Probe
- 3273-50 Current Probe
- 3275 Current Probe
- 3276 Current Probe
- MR6000 Memory Recorder

Version	Date	Author	Approved	Document changes
preliminary	09.06.2026	KS	KS	First Release
v1.0	11.06.2026	KS	KS	Added number of sensors supported by PSUs, added CT6704 to related products