

Product

CT6704 Current Probe

Headline

AC/DC Fluxgate Current Probe, 200 A / 30 MHz

Short Description

AC/DC current probe with fluxgate sensing, 200 A rated current, ± 400 A peak, DC to 30 MHz bandwidth, 10 mV/A output, BNC connector, 11.6 ns rise time, ± 0.5 % rdg. ± 0.5 mV accuracy, overload indication

Banner Specs

- 200 A rms rated current
- DC to 30 MHz bandwidth
- Accuracy: ± 0.5 % rdg. ± 0.5 mV
- Standard BNC output for oscilloscopes

Applications

- Current measurements in fast power electronics circuits
- Analysis of SiC and GaN switching behavior
- Switching loss analysis of power modules
- Measurements on DC/DC converters and switching power supplies
- Development and testing of motor drives

| Model | Rated current / ranges | Bandwidth | Rise time | Max. conductor \varnothing | Sensing method |
|---------|------------------------|------------|----------------|------------------------------|----------------|
| CT6711 | 0.5 / 5 / 30 A | DC–120 MHz | ≤ 2.9 ns | max. $\varnothing 5$ mm | Hall element |
| CT6710 | 0.5 / 5 / 30 A | DC–50 MHz | ≤ 7.0 ns | max. $\varnothing 5$ mm | Hall element |
| CT6701 | 5 A | DC–120 MHz | ≤ 2.9 ns | max. $\varnothing 5$ mm | Hall element |
| CT6700 | 5 A | DC–50 MHz | ≤ 7.0 ns | max. $\varnothing 5$ mm | Hall element |
| 3276 | 30 A | DC–100 MHz | ≤ 3.5 ns | max. $\varnothing 5$ mm | Hall element |
| 3273-50 | 30 A | DC–50 MHz | ≤ 7.0 ns | max. $\varnothing 5$ mm | Hall element |
| CT6704 | 200 A | DC–30 MHz | ≤ 11.6 ns | max. $\varnothing 20$ mm | Fluxgate |
| CT6705 | 500 A | DC–15 MHz | ≤ 23.3 ns | max. $\varnothing 20$ mm | Fluxgate |

Product Description

With the CT6704, HIOKI combines the fluxgate measurement principle known from power measurement with the wide bandwidth of an oscilloscope current probe. The AC/DC current probe reduces DC offset drift caused by temperature changes and self-heating and extends the usable frequency range at high currents. Current waveforms can therefore be captured



with stable signal behavior during longer measurements and with high-frequency signal components.

The CT6704 measures currents up to 200 A rms with a maximum peak current of ± 400 A. The frequency range extends from DC to 30 MHz. Rise time is 11.6 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 BNC input.

Stable waveforms at DC and 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 drifts only very slightly under changing ambient temperatures and self-heating. The specified operating temperature range extends from -10 °C to $+50$ °C.

The usable frequency range at high currents is not determined by bandwidth alone, but by the probe's frequency derating characteristics. The CT6704 carries its full rated current of 200 A rms up to 100 kHz without derating. This is based on an optimized magnetic and thermal design that reduces heating caused by high-frequency current components, so high currents remain measurable well beyond 100 kHz within the specified derating limits.

Connection and system integration

The CT6704 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 BNC input. For detailed current waveforms, fast transients and longer measurement sequences, 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. One 3269 powers up to three CT6704 probes at the same time; an MR6000 fitted with the Z5021 supports up to five.

For measurement preparation, the CT6704 has a demagnetization function and automatic zero adjustment. The CT6704 was developed in Japan and is manufactured there at HIOKI's own factory. It complements HIOKI's current sensor portfolio, whose development has focused for decades on precise AC/DC current measurement and stable measurement signals for laboratory and R&D use.

What's in the box

- CT6704 with hard shell case
- Instruction manual
- Operating precautions

Related Products

- 3269 Power Supply
- CT6705 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 |
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