

30 A AC/DC Current Probe

TCP0030A Datasheet



TCP0030A is a high-performance, easy-to-use AC/DC current probe designed for use and direct connection to oscilloscopes with the TekVPI™ probe interface. This AC/DC current measurement probe provides greater than 120 MHz of bandwidth with selectable 5 A and 30 A measurement ranges. It also provides exceptional low-current measurement capability and accuracy to current levels as low as 1 mA, important for meeting today's challenging current measurement needs.

Key features

- Easy-to-use and accurate AC/DC current measurements
- Intelligent communication with TekVPI™ oscilloscopes provides:
 - Units scaling and readout. Automatic, on-screen readout of amps and magnitude. Manual setup is not required. Hand calculation from volts to amps is unnecessary
 - Push button degauss and Autozero functionality
 - Probe status and diagnostic indicator LEDs
 - Remote GPIB/USB probe control

- Split-core construction allows easy circuit connection
- High accuracy with typically less than 1% DC gain error
- Low noise and DC drift
- 3rd party safety certification

Key performance specifications

- DC to >120 MHz bandwidth
- 30 A RMS maximum current capability
- 50 A peak pulse current capability
- High accuracy with typically less than 1% DC gain error
- Accurately measures current levels as low as 1 mA

Applications

- Power supplies
- Semiconductor devices
- Power inverters/converters
- Electronic ballasts
- Industrial/consumer electronics
- Mobile communications
- Motor drives
- Transportation systems

Specifications

All specifications apply to all models unless noted otherwise.

Electrical characteristics

| | |
|-----------------------------------|--|
| Bandwidth | DC to ≥ 120 MHz |
| Rise time | ≤ 2.92 ns |
| Maximum DC current | 30 A |
| Maximum RMS current | 30 A |
| Maximum peak pulse current | 50 A |
| Maximum bare wire voltage | 150 V CAT II, (insulated wire 300 V CAT II) |
| Sensitivity | 1 mA (on oscilloscopes that support 1 mV/div setting) |
| DC accuracy | $\pm 1\%$ typical $\pm 3\%$ warranted |
| Maximum Amp-Second product | 500 A $\cdot\mu$ s (in 30 A range) |
| Insertion impedance | 1 m Ω at 10 kHz 3.5 m Ω at 100 kHz 0.08 Ω at 1 MHz 0.15 m Ω at 10 MHz 0.7 Ω at 100 MHz 0.85 Ω at 120 MHz |
| Signal delay | 14.5 ns |
| Current ranges | 5 A and 30 A |
| Power requirements | TCP0030A is powered directly by oscilloscopes with the TekVPI™ interface. Note: For best support, download and install the latest version of the oscilloscope software from www.tek.com . |

Physical characteristics

| | |
|-------------------------------|-------------------|
| Probe head | |
| Length | 20 cm (7.77 in) |
| Width | 1.6 cm (0.625 in) |
| Height | 3.2 cm (1.25 in) |
| Maximum conductor size | 5 mm (0.197 in) |
| Cable Length | 200 cm (79 in) |
| Shipping Weight | 1.55 kg (3.44 lb) |

EMC environment and safety**Temperature**

| | |
|---------------------|-------------------------------------|
| Operating | 0 °C to 50 °C (32 °F to 122 °F) |
| Nonoperating | -40 °C to +75 °C (-40 °F to 167 °F) |

Humidity

| | |
|---------------------|--|
| Operating | 5% to 95% Relative Humidity (RH) at up to +30 °C; 5% to 85% RH above 30 °C up to +50 °C, noncondensing |
| Nonoperating | 5% to 95% Relative Humidity (RH) at up to +30 °C; 5% to 85% RH above 30 °C up to +75 °C, noncondensing |

Altitude

| | |
|---------------------|-----------------------------|
| Operating | Up to 3,000 m (10,000 ft.) |
| Nonoperating | Up to 12,192 m (40,000 ft.) |

Compliance labeling

CE (European Union), WEEE (European Union)

Ordering information

Models

| | |
|----------|---------------------|
| TCP0030A | AC/DC Current Probe |
|----------|---------------------|

Standard accessories

| | |
|----------------------------------|-------------|
| Instruction manual | 071-3006-xx |
| Probe ground lead - 6 in. length | 196-3120-xx |
| Nylon carrying case | 016-1952-xx |

Recommended accessories

| | |
|--|-------------------|
| Current Loop, 1 Turn, 50 Ω with BNC connector used for Performance Verification | Order 067-2396-00 |
|--|-------------------|

Warranty

One year parts and labor.

Service options

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|--------------|---|
| Opt. C3 | Calibration Service 3 Years |
| Opt. C5 | Calibration Service 5 Years |
| Opt. D3 | Calibration Data Report 3 Years (with Opt. C3) |
| Opt. D5 | Calibration Data Report 5 Years (with Opt. C5) |
| Opt. R3 | Repair Service 3 Years (including warranty) |
| Opt. R3DW | Repair Service Coverage 3 Years (includes product warranty period). 3-year period starts at time of instrument purchase |
| Opt. R5 | Repair Service 5 Years (including warranty) |
| Opt. R5DW | Repair Service Coverage 5 Years (includes product warranty period). 5-year period starts at time of instrument purchase |
| Opt. SILV600 | Standard warranty extended to 5 years |



Tektronix is registered to ISO 9001 and ISO 14001 by SRI Quality System Registrar.

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