

# 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 are guaranteed unless noted otherwise. All specifications apply to all models unless noted otherwise.

### Electrical characteristics

<b>Bandwidth</b>	DC to $\geq 120$ MHz
<b>Rise time</b>	$\leq 2.92$ ns
<b>Maximum DC current</b>	30 A
<b>Maximum RMS current</b>	30 A
<b>Maximum peak pulse current</b>	50 A
<b>Maximum bare wire voltage</b>	150 V CAT II, (insulated wire 300 V CAT II)
<b>Sensitivity</b>	1 mA (on oscilloscopes that support 1 mV/div setting)
<b>DC accuracy</b>	$\pm 3\%$ warranted
<b>Accuracy, typical</b>	DC: $\pm 1\%$ of reading DC to 60 Hz, $\leq 5$ A: $\pm 1\%$ 60 Hz – 5 kHz, $\leq 5$ A: $\pm 1.5\%$ DC – 5 kHz, $> 5$ A: $\pm 1.5\%$
<b>Maximum Amp-Second product</b>	500 A $\cdot\mu$ s (in 30 A range)
<b>Insertion impedance</b>	1 m $\Omega$ at 10 kHz 3.5 m $\Omega$ at 100 kHz 0.08 $\Omega$ at 1 MHz 0.15 m $\Omega$ at 10 MHz 0.7 $\Omega$ at 100 MHz 0.85 $\Omega$ at 120 MHz
<b>Signal delay</b>	14.5 ns
<b>Current ranges</b>	5 A and 30 A
<b>Power requirements</b>	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 <a href="http://www.tek.com">www.tek.com</a> .

## Physical characteristics

<b>Probe head</b>	
Length	20 cm (7.77 in)
Width	1.6 cm (0.625 in)
Height	3.2 cm (1.25 in)
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Maximum conductor size	5 mm (0.197 in)
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Cable length	200 cm (79 in)
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Shipping weight	1.55 kg (3.44 lb)
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## EMC environment and safety

<b>Temperature</b>	
Operating	0 °C to 50 °C (32 °F to 122 °F)
Nonoperating	-40 °C to +75 °C (-40 °F to 167 °F)
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<b>Humidity</b>	
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
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<b>Altitude</b>	
Operating	Up to 3,000 m (10,000 ft.)
Nonoperating	Up to 12,192 m (40,000 ft.)
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Compliance labeling	CE (European Union), WEEE (European Union)
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## Ordering information

### Models

TCP0030A	AC/DC Current Probe
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### 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 $\Omega$ with BNC connector used for Performance Verification	Order 067-2396-00
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### Warranty

One year parts and labor.

## Service options

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



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\* European toll-free number. If not accessible, call: +41 52 675 3777

**For Further Information.** Tektronix maintains a comprehensive, constantly expanding collection of application notes, technical briefs and other resources to help engineers working on the cutting edge of technology. Please visit [www.tek.com](http://www.tek.com).

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28 Jan 2016 51W-19042-9

