30 A AC/DC Current Probe
TCP0030A Datasheet

- 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

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

Specifications

All specifications are guaranteed unless noted otherwise. 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	±3% warranted
Accuracy, typical	DC: ±1% of reading DC to 60 Hz, ≤5 A: ±1% 60 Hz – 5 kHz, ≤5 A: ±1.5% DC – 5 kHz, >5 A: ±1.5%
Maximum Amp-Second product	500 A*μs (in 30 A range)
Insertion impedance	1 mΩ at 10 kHz 3.5 mΩ at 100 kHz 0.08 Ω at 1 MHz 0.15 mΩ 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

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

CE

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