

TCP0150MasterMap

AC/DC Current Probe

TCP0150 Datasheet

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テクトロニクス/ケースレーインズツルメンツ

お客様コールセンター：技術的な質問、製品の購入、価格・納期、営業への連絡

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The TCP0150 is a high performance and easy-to-use 150 A AC/DC current probe designed for use and direct connection to the TekVPI™ probe interface.

Key performance specifications

- DC to 20 MHz bandwidth
- 150 A_{RMS} maximum current capability
- 500 a peak pulse current capability
- High accuracy with typically less than 1% DC gain error
- Accurately measures current levels as low as 5 mA

Key features

- Easy-to-Use and accurate AC/DC current measurements
- Connects directly to oscilloscopes with the TekVPI™ probe interface
- Low noise and DC drift
- Provides automatic units scaling and readout on the oscilloscope's display
- Remote GPIB/USB probe control through the oscilloscope
- Split-core probe head construction allows easy connection to conductors
- Easy to degauss and autozero
- Setup controls and probe status and diagnostic indicators are provided on both the probe hardware and through an Easy-to-Access scope UI display menu

Applications

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

This AC/DC current measurement probe provides 20 MHz of frequency bandwidth with selectable range control for 25 A and 150 A measurement ranges. It also provides low-current measurement

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capability and accuracy to current levels as low as 5 mA per division — important for achieving broad dynamic current range of high-level and low-level measurement signals.

Specifications

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

Warranted characteristics

Bandwidth

Bandwidth DC to ≥ 20 MHz (-3 dB). Derate with frequency. See Figure 1. (Calculated from Rise Time $BW = .35/\text{Rise Time}$)

Risetime

Rise time ≤ 17.5 ns

MaxRMScurrent

Max RMS current 150 A

Maxpeakpulsecurrent

Max peak pulse current 500 A

Minimumsensitivity

Minimum sensitivity 5 mA (on oscilloscope's 1 mV/div setting) AC coupling (on oscilloscopes that support AC/DC coupling)

Currentranges

Current ranges 25 A and 150 A

Maxbare-wirevoltage

Max bare-wire voltage
600 V_{RMS} CAT I and II
300 V_{RMS} CAT III

Typical characteristics

DCaccuracy

DC accuracy $\pm 1\%$ typical (3% warranted)

Maxamp-secondproduct

Max amp-second product

25 A range 3,000 a μ s

150 A range 15,000 a μ s

Insertion impedance

Insertion impedance 0.03 Ω at 1 MHz 0.075 Ω at 5 MHz
 .125 at 10 MHz
 .3 at 20 MHz

Signal delay

Signal delay \approx 21 ns

Displayed RMS noise

Displayed RMS noise \leq 500 μ A_{RMS} (probe only)

Physical characteristics**Cable length**

Cable length 2 meters (79 in.)

Probe Head**Probe head size**

Length 26.8 cm (10.55 in.)
Width 4.1 cm (1.6 in.)
Height 15.6 cm (6.13 in.)

Max conductor diameter

Max conductor diameter 21 mm x 25 mm (0.83 in. x 1.0 in.)

Shipping weight

Shipping weight .7865 kg (1.734 lb.)

Power requirements

Power requirements TCP0150 is powered directly by oscilloscopes with the TekVPI interface

Environmental**Temperature**

Temperature

| | |
|--------------|------------------|
| Operating | 0 °C to +50 °C |
| Nonoperating | -40 °C to +75 °C |

Humidity

Humidity

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

Altitude

Altitude

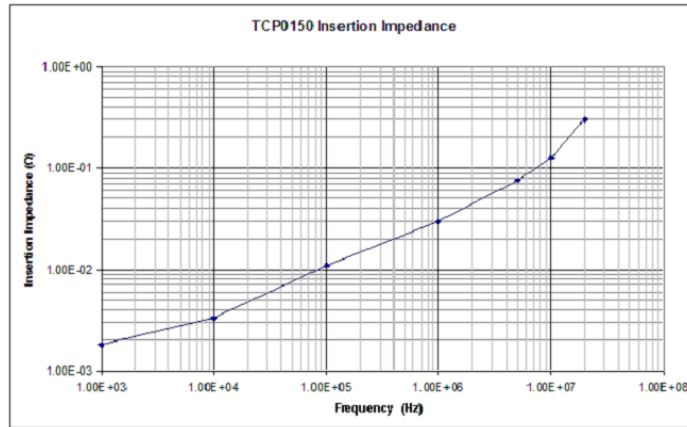
| | |
|--------------|-----------------------------------|
| Operating | Up to 2,000 meters (6,560 feet) |
| Nonoperating | Up to 12,000 meters (40,000 feet) |

Recommended oscilloscopes**Recommended oscilloscopes**

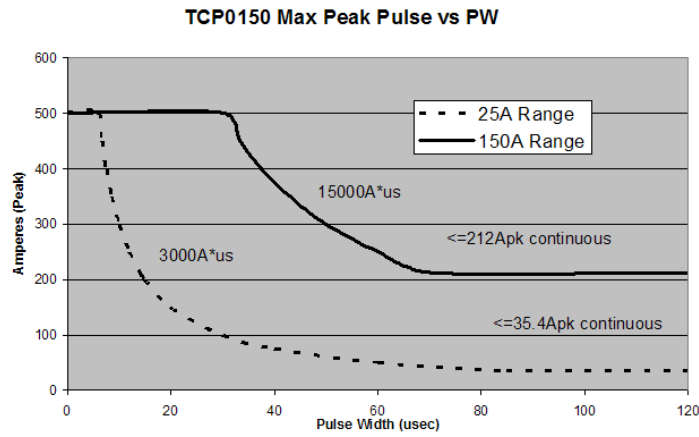
Oscilloscopes with the TekVPI probe interface.

Note: For best probe support, download and install the latest version of the oscilloscope software from www.tek.com/software/downloads

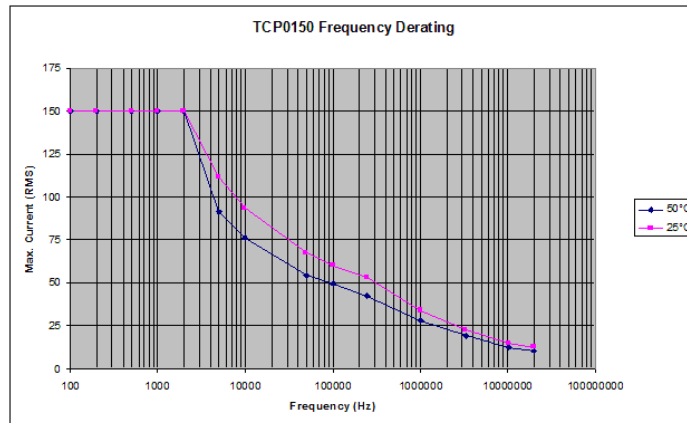
PerformanceGraphs



TCP0150 insertion impedance



TCP0150 Max Peak Pulse versus PW



Do not apply currents greater than the max continuous current for more than 10 seconds to minimize heating effects.

Ordering information

Models

TCP0150 AC/DC current probe with TekVPI interface.

Includes: protective cover (016-1924-xx), and certificate of traceable calibration and data standard.

Options

Language options

| | |
|---------|---------------------------|
| Opt. L0 | English manual |
| Opt. L5 | Japanese manual |
| Opt. L7 | Simplified Chinese manual |
| Opt. L9 | Korean manual |

Service options

| | |
|--------------|--|
| Opt. CA1 | Single Calibration or Functional Verification |
| 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. R5 | Repair Service 5 Years (including warranty) |
| Opt. SILV600 | Standard warranty extended to 5 years |

Recommended accessories

Recommended accessories

| | |
|-------------|--|
| 015-0601-50 | Current loop, 1 turn, 50 Ω with BNC connector used for performance verification |
| 067-1701-xx | TekVPI calibration fixture |
| 067-1686-xx | Cal/Deskew fixture for DPO7000/70000 series |



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



Product(s) complies with IEEE Standard 488.1-1987, RS-232-C, and with Tektronix Standard Codes and Formats.

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