

# Current Probes



## Key Features

- **ProBus active probe interface with automatic scaling in A/div**
- **Autozero and degauss capabilities built into instrument's user interface**
- **CP030**
  - 30 A<sub>rms</sub> continuous current
  - 50 A<sub>peak</sub> current
  - 50 MHz bandwidth
- **CP030A**
  - 30 A<sub>rms</sub> continuous current
  - 50 A<sub>peak</sub> current
  - 50 MHz bandwidth
  - 1 mA/div sensitivity
- **CP031**
  - 30 A<sub>rms</sub> continuous current
  - 50 A<sub>peak</sub> current
  - 100 MHz bandwidth
- **CP031A**
  - 30 A<sub>rms</sub> continuous current
  - 50 A<sub>peak</sub> current
  - 100 MHz bandwidth
  - 1 mA/div sensitivity
- **CP150**
  - 150 A<sub>rms</sub> continuous current
  - 500 A<sub>peak</sub> current
  - 10 MHz bandwidth
- **CP500**
  - 500 A<sub>rms</sub> continuous current
  - 700 A<sub>peak</sub> current
  - 2 MHz bandwidth

**Teledyne LeCroy current probes do not require the breaking of a circuit or the insertion of a shunt to make accurate and reliable current measurements. Based on a combination of Hall effect and transformer technology, Teledyne LeCroy current probes are ideal for making accurate AC, DC, and impulse current measurements.**

## Wide Range of Applications

Teledyne LeCroy current probes are available in a variety of models for a wide range of applications. The full range of Teledyne LeCroy current probes includes models with bandwidths up to 100 MHz, peak currents up to 700 A and sensitivities to 1 mA/div. Teledyne LeCroy current probes are often used in applications such as the design and test of switching power supplies, motor drives, electric vehicles, and uninterruptible power supplies.

## High Sensitivity

The CP030A and CP031A provide a high sensitivity of 1 mA/div. This allows for more precise low current measurements on Teledyne LeCroy oscilloscopes. When used with HDO high definition oscilloscopes with HD4096 technology, users will obtain highly accurate, low current waveforms with unmatched 12-bit resolution for improved debug and analysis.

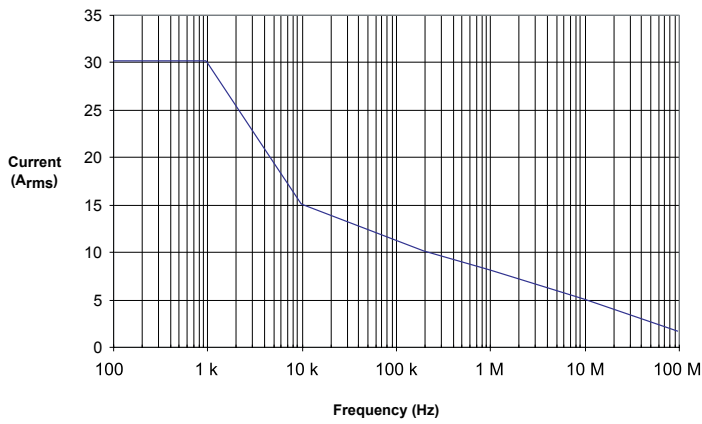
## Fully Integrated

All Teledyne LeCroy current probes are powered through the Teledyne LeCroy ProBus® connection and require no additional hardware. Along with providing power, the ProBus connection allows the current probe and oscilloscope to communicate, resulting in current waveforms automatically displayed on screen in Amps, and calculated power traces scaled correctly in Watts. This full integration also allows for Degauss and Autozero functions to be done directly from the oscilloscope's user interface.

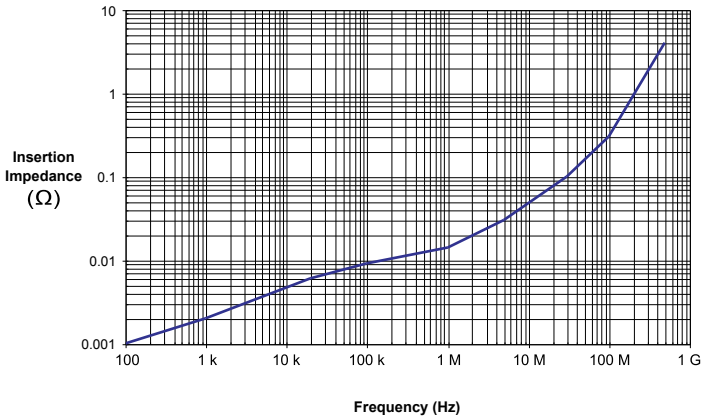
## Deskew Calibration Source

The DCS025 deskew calibration source has both voltage and current time-aligned signals, which enables the precise deskew of voltage and current probes. Most voltage probes along with 30, 150 and 500A current probes are compatible with the DSC025.

## CP031/ CP031A

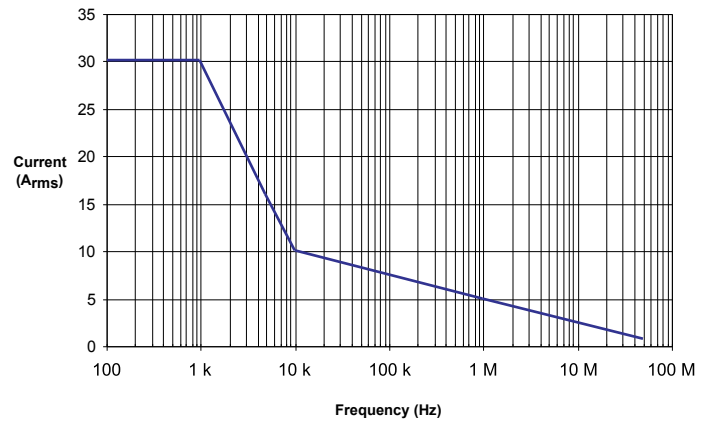


Maximum Input Current vs. Frequency

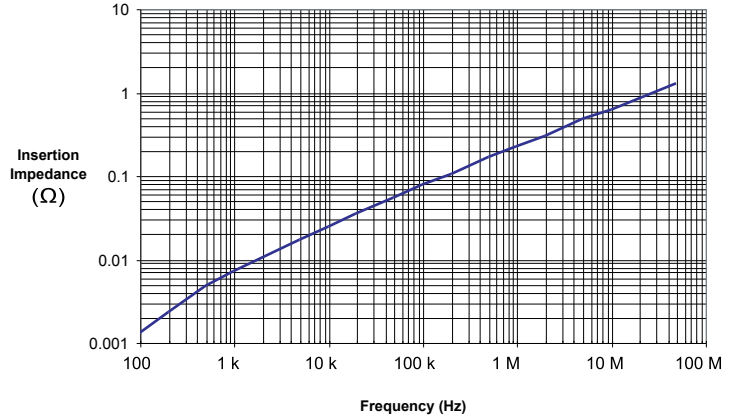


Insertion Impedance vs. Frequency (typical)

## CP030 / CP030A



Maximum Input Current vs. Frequency\*



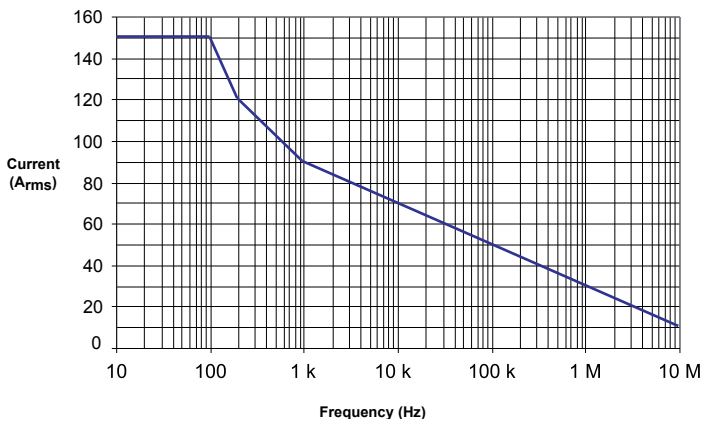
Insertion Impedance vs. Frequency\* (typical)

\*This performance does not apply to CP030-3M model.

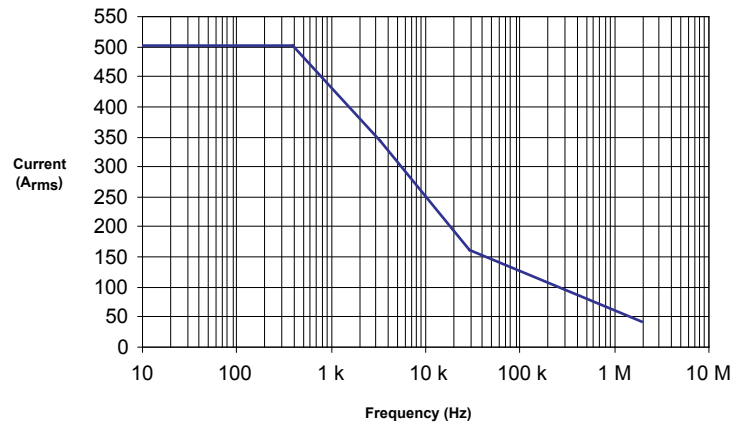
## CP150



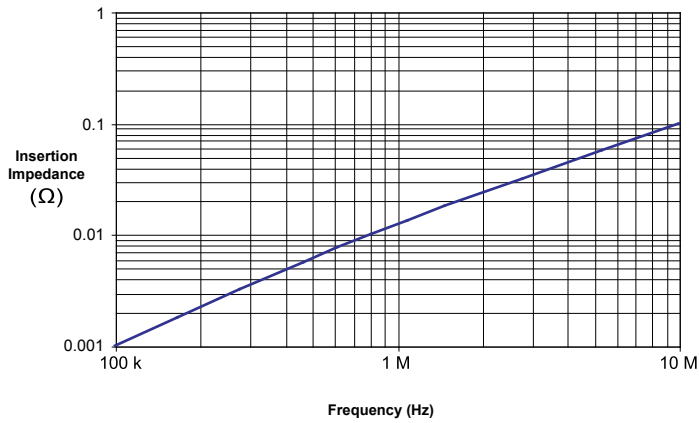
## CP500



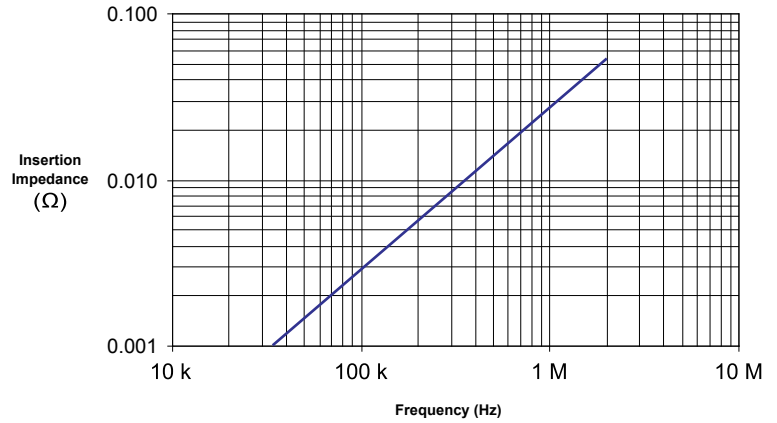
Maximum Input Current vs. Frequency\*



Maximum Input Current vs. Frequency



Insertion Impedance vs. Frequency\*  
(typical)



Insertion Impedance vs. Frequency  
(typical)

\*This performance does not apply to CP150-6M model.

# SPECIFICATIONS & ORDERING INFORMATION

| Specifications  | CP030<br>(CP030-3M)                   | CP030A          | CP031     | CP031A   | CP150<br>(CP150-6M) | CP500                                     |
|---|---------------------------------------|-----------------|-----------|--|---------------------|---|
| Max. Continuous Input Current                             | 30 A <sub>rms</sub>                   |                 |           | 150 A <sub>rms</sub>   |                     | 500 A <sub>rms</sub>                      |
| Bandwidth   | 50 MHz<br>(10 MHz)                    | 100 MHz         |           | 10 MHz<br>(5 MHz)  |                     | 2 MHz                                     |
| Rise Time (typical)                                       | ≤ 7 ns<br>(≤ 35 ns)                   | ≤ 3.5 ns        |           | ≤ 35 ns<br>(≤ 70 ns)   |                     | ≤ 175 ns                                  |
| Max. Peak Current   | 50 A <sub>peak</sub> (non-continuous) |                 |           | 300 A <sub>peak</sub> (non-continuous);<br>500 A <sub>peak</sub> ≤ 30 μs |                     | 700 A <sub>peak</sub><br>(non-continuous) |
| Output Voltage  | 0.1 V/A                               | 0.1 V/A & 1 V/A | 0.1 V/A   | 0.1 V/A & 1 V/A  | 0.01 V/A            |   |
| Max Continuous Input Current at 1 V/A (100mA/div or less) | –                                     | 5 A             | –         | 5 A  | –                   |   |
| Offset Range at 1V/A (100mA/div or less)                  | –                                     | ±5 A            | –         | ±5 A   | –                   |   |
| Minimum Sensitivity                                       | 10 mA/div                             | 1 mA/div        | 10 mA/div | 1 mA/div   | 100 mA/div          |   |
| Low-Frequency Accuracy                                    | 1%                                    |                 |           |  |                     |   |
| AC Noise at 20 MHz BWL                                    | ≤ 2.5 mA                              | ≤ 150 μA        | ≤ 2.5 mA  | ≤ 150 μA   | ≤ 6.0 mA            | ≤ 8.0 mA                                  |
| Coupling  | AC, DC, GND                           |                 |           |  |                     |   |

## General Characteristics

|                                |                   |       |       |                             |                  |       |
|--------------------------------|-------------------|-------|-------|-----------------------------|------------------|-------|
| Cable Length                   | 1.5 m<br>(3 m)    | 1.5 m |       | 2 m<br>(6 m)                |                  | 6 m   |
| Weight                         | 240 g<br>(290 g)  | 260 g | 240 g | 260 g                       | 500 g<br>(600 g) | 630 g |
| Max. Conductor Size (Diameter) | 5 mm              |       |       | 20 mm                       |                  |       |
| Interface                      | ProBus, 1 MΩ only |       |       |                             |                  |       |
| Usage Environment              | Indoor            |       |       |                             |                  |       |
| Operating Temperature          | 0° C to 40° C     |       |       |                             |                  |       |
| Max. Relative Humidity         | 80%               |       |       |                             |                  |       |
| Max. Altitude                  | 2000 m            |       |       |                             |                  |       |
| Maximum Insulated Wire Voltage | 300 V CAT I       |       |       | 600 V CAT II, 300 V CAT III |                  |       |

\* Electrical Characteristics Guaranteed at 23 °C ±3 °C

CP03x, CP150, and CP500 probes (and long cable versions of these) are compatible with any Teledyne LeCroy oscilloscope with a ProBus interface running firmware version 4.3.1.1 or great.

CP03xA probes are compatible with most Teledyne LeCroy oscilloscopes with a ProBus interface running X-Stream™ firmware version 7.8.x.x or later, including WaveSurfer Xs-A, MXs/MXs-A/MXs-B, and 10; HDO4000, 6000, 8000, and 9000; MDA800, HRO/WaveRunner 6 Zi, WaveRunner 8000, Xi/Xi-A/MXi/MXi-A, WavePro/SDA/DDA 7 Zi/Zi-A; WaveMaster/SDA/DDA 8 Zi/Zi-A/Zi-B, and LabMaster 9 Zi-A series. WavePro 7000/7000A series are compatible if they are running Windows XP Professional and X-Stream™ firmware version 7.8.x.x or later. WaveSurfer Xs series must be upgraded to Windows XP Professional. Contact your local service center regarding upgrades.

## Ordering Information

### Product Description

| Product Description  | Product Code |
|--|--------------|
| 30 A; 50 MHz Current Probe – AC/DC; 30 A <sub>rms</sub> ; 50 A Peak Pulse, 1.5 meter cable                   | CP030        |
| 30A; 10 MHz Current Probe - AC/DC, 30 Arms; 50 A Peak Pulse, 3 meter cable (not EMC compliant)               | CP030-3M     |
| 30 A; 50 MHz High Sensitivity Current Probe – AC/DC; 30 A <sub>rms</sub> ; 50 A Peak Pulse, 1.5 meter cable  | CP030A       |
| 30 A; 100 MHz Current Probe – AC/DC; 30 A <sub>rms</sub> ; 50 A Peak Pulse, 1.5 meter cable                  | CP031        |
| 30 A; 100 MHz High Sensitivity Current Probe – AC/DC; 30 A <sub>rms</sub> ; 50 A Peak Pulse, 1.5 meter cable | CP031A       |
| 150 A; 10 MHz Current Probe – AC/DC; 150 A <sub>rms</sub> ; 500 A Peak Pulse, 2 meter cable                  | CP150        |
| 150 A; 5 MHz Current Probe – AC/DC; 150 Arms; 500 A Peak Pulse, 6 meter cable (not EMC compliant)            | CP150-6M     |
| 500 A; 2 MHz Current Probe – AC/DC; 500 A <sub>rms</sub> ; 700 A Peak Pulse, 6 meter cable                   | CP500        |
| Deskew Calibration Source  | DCS025       |

### Customer Service

Teledyne LeCroy oscilloscopes and probes are designed, built, and tested to ensure high reliability. In the unlikely event you experience difficulties, our digital oscilloscopes are fully warranted for three years and our probes are warranted for one year. This warranty includes:

- No charge for return shipping
- Long-term 7-year support
- Upgrade to latest software at no charge



1-800-5-LeCroy  
teledynelecroy.com

Local sales offices are located throughout the world.  
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- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

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- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

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