Quick Guide

High Frequency AC/DC Current Probe CP series

1. Overview

With up to 100 MHz bandwidth and 300 Arms continuous current, the Micsig CP Series features 1% accuracy and 1 mA resolution for precise waveform capture and reliable measurements. A dual-range design covers both small-signal detection and high-current transient analysis, helping engineers optimize their designs.

Featuring 5 mm and 20 mm jaw options, one-button degauss/auto-zero, and a built-in overcurrent alarm, the CP Series ensures easy operation and safety. The standard BNC interface is compatible with most oscilloscope brands, making it ideal for new energy and industrial electronics testing.

CP3008 / CP3005 / CP1510

CP503B / CP1003B

2. Characteristics

CP3008, CP3005, CP1510

Model	CP3008	CP3005	CP1510
Bandwidth	DC~8MHz	DC~5MHz	DC~10MHz
Rise time	≤ 50ns	≤ 70ns	≤ 46ns
Range	50Arms (50A) 300Arms (300A)	50Arms (50A) 300Arms (300A)	30Arms (30A) 150Arms (150A)
Max. Current Input	500Apk, 300Arms	500Apk, 300Arms	300Apk, 150Arms
Accuracy (Max continuous current @ DC and 45-66Hz)	±1% ±10mA (50A) ±1% ±100mA (300A)	±1% ±10mA (50A) ±1% ±100mA (300A)	±1% ±10mA (30A) ±1% ±100mA (150A)
Lowest measurable current	10mA (50A) 100mA (300A)	10mA (50A) 100mA (300A)	10mA (30A) 100mA (150A)
Noise	<1.5mArms (10X) <12mArms (100X)	<1.5mArms (10X) <12mArms (100X)	<1.5mArms (10X) <10mArms (100X)
Delay	40ns	40ns	40ns
Output Sensitivity	0.1V/1A (50A, 10X) 0.01V/1A (300A, 100X)	0.1V/1A (50A, 10X) 0.01V/1A (300A, 100X)	0.1V/1A (30A, 10X) 0.01V/1A (150A, 100X)
Overcurrent alarm value	≥ 50Apk (50A) ≥ 300ApK (300A)	≥ 50Apk (50A) ≥ 300ApK (300A)	≥ 30Apk (30A) ≥ 150Apk (150A)
Power Supply	DC 12V		
Max. Working Voltage	CAT II 600V CAT III 300V		
Max. Floating Voltage	CAT II 600V CAT III 300V		
Max. Conductor Diameter	20mm		
Load Impedance	≥ 100kΩ		
Temperature	Operating temperature: 0℃ ~ 50 ℃ Storage temperature: -20 ℃ ~ 80 ℃		

CP503B, CP1003B

Model	CP503B	CP1003B
Bandwidth	DC~50MHz	DC~100MHz
Rise time	≤ 7ns	≤ 3.5ns
Range	5Arms (5A) 30Arms (30A)	5Arms (5A) 30Arms (30A)
Max. Current Input	50Apk, 30Arms	50Apk, 30Arms
Accuracy (Max continuous current @ DC and 45-66Hz)	±1% ±1mA (5A) ±1% ±10mA (30A)	±1% ±1mA (5A) ±1% ±10mA (30A)

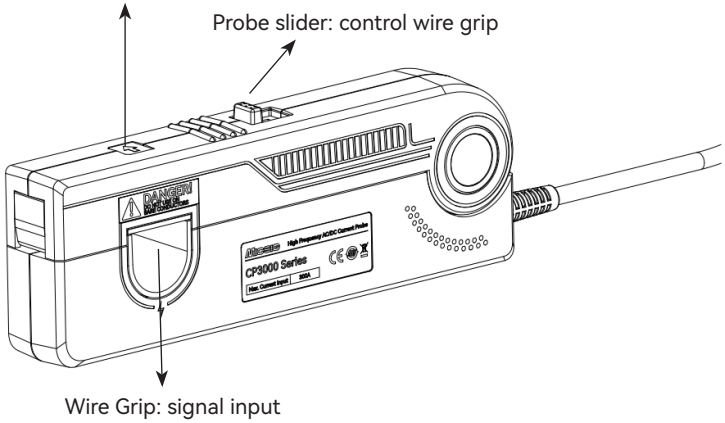
Model	CP503B	CP1003B
Lowest measurable current	1mA (5A) 10mA (30A)	1mA (5A) 10mA (30A)
Noise	< 4mApp (5A) < 30mApp (30A)	< 4mApp (5A) < 30mApp (30A)
Delay	< 6.5ns (5A) < 8.5ns (30A)	< 6.5ns (5A) < 8.5ns (30A)
Output Sensitivity	1V / 1A (5A, 1X) 1V / 10A (30A, 10X)	1V / 1A (5A, 1X) 1V / 10A (30A, 10X)
Overcurrent alarm value	≥ 7Apk (5A) ≥ 50ApK (30A)	≥ 7Apk (5A) ≥ 50ApK (30A)
Power Supply	DC 12V	
Max. Working Voltage	CAT I 300V	
Max. Floating Voltage	CAT I 300V	
Max. Conductor Diameter	5mm	
Load Impedance	≥ 100kΩ	
Temperature	Operating temperature: 0℃ ~ 50 ℃ Storage temperature: -20 ℃ ~ 80 ℃	

3. Appearance

1) Probe Head

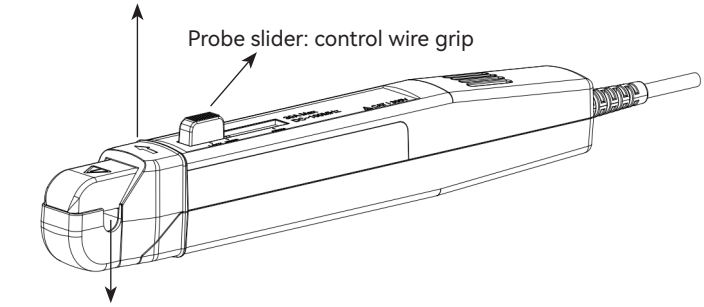
CP3008, CP3005, CP1510

Current Direction Indicator: Positive output corresponds to indicated direction



CP503B, CP1003B

Current Direction Indicator: Positive output corresponds to indicated direction



2) Control module

*Only CP3008, CP3005, and CP1510 models are equipped with OVERLOAD and UNLOCK indicators.

Range button: range switching

Zero button: automatic zero-calibration

OVERLOAD: flash when the current is overloaded

UNLOCK: flash when the clamp is not fully closed

4. Precautions

1) Please confirm that the oscilloscope's input impedance is set to 1MΩ, not 50Ω, otherwise it will not measure correctly.

2) When measuring, be sure to push the clamp head slider to the "LOCK" position.
   - CP3008/CP3005/CP1510: Close the jaw completely and slide the lock button forward until the UNLOCK indicator turns off.
   - CP503B/CP1003B: Close the jaw firmly and push until an audible "click" is heard, confirming it is securely locked.

3) The wire grip is a precision component, please pay attention:
   - When the slider is in the "LOCK" position, you can degauss the probe and take measurements.
   - Move the slider to the "OPEN" unlocked position to insert or remove the wire from wire clip.
   - The grip will accept wire diameters up to 5mm.
   - Place your finger behind the safe handling area.

4) To ensure accurate measurements, degauss the probe under following conditions:
   - Turn on the measuring system and allow a 20-minute warm-up time
   - Before connecting the probe to the wire
   - Whenever there is a current or thermal overload
   - Whenever the probe is placed in a strong external magnetic field

5) Press the button "Zero ", the button lights up, and the probe performs degaussing and zero calibration. If the button light flashes 5 times, it means zero calibration failed.

6) Current Overload Indication:
   - CP3008, CP3005, and CP1510: Flashing OVERLOAD light with audible alarm.
   - CP503B and CP1003B: Corresponding range button's status indicator will flash.

7) For correct polarity readings, connect the probe from positive to negative so that the direction of current flow matches the arrow on the probe clip.

8) Must use the adapter provided with the probe for power supply, DO NOT use USB port on the oscilloscope.

5. Operation Steps

1) Power supply: Use the 12V standard adapter to power the probe.
2) Zero Calibration: Make sure the slider is in the "LOCK" position and press the zero button.
3) Connect to the oscilloscope: Connect the probe to the oscilloscope and make sure the grounding of the oscilloscope is normal.
4) Select the range: Select the appropriate range according to the range of the measured current.
5) Connect to DUT: Push the slider to the "OPEN" position, place the measured conductor into the wire grip, and then push the slider to the "LOCK" position.
6) Start the power supply of the DUT.
7) Set up the oscilloscope: Set the input impedance of the oscilloscope to 1MΩ, and make the channel attenuation ratio consistent with the probe gear, then adjust the oscilloscope's vertical gear, time base, and trigger to normally observe the waveform.

6. Warranty

1) Micsig warrants the main body of this differential probe for 1 year.During the warranty period, Micsig will be responsible for free maintenance for any failure caused by product quality under normal use.

2) Under the following circumstances, Micsig will refuse to provide maintenance services or charge for a fee:
   - No packaging or anti-counterfeiting label.
   - Anti-counterfeit label has been altered or blurred beyond recognition.
   - Unauthorized disassembly, such as: changing wires, dismantling internal components, etc.
   - No sales voucher or the content of sales voucher does not match the product.

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