User Manual

Current Probe Instruction Manual

CP5000 Series Current Probe

Safety Notices

Note

A **Note** notice denotes important instructions.

CAUTION

A **CAUTION** notice denotes a hazard. It calls attention to an operation procedure ,practice, or the like that, if not correctly performed or adhered to, could result in damage to the product or loss of important data. Do not proceed beyond a CAUTION notice until the indicated conditions are fully understood and met.

WARNING

A **WARNING** notice denotes a hazard. It calls attention to an operationprocedure ,practice,or the like that, if not correctly performed or adhered to ,couldresult in personal injury or death. Do not proceed beyond a **WARNING** notice until the indicated conditions are fully understood and met.

CP5000 Series Summary

Model	Peak Current	Continuous Maximum Input Range	BW(-3dB)	Range
CP5500	750A	500Arms	5MHz	500A/70A
CP5150	300A	150Arms	12MHz	150A/30A
CP5030	50A	30Arms	50MHz	30A/5A
CP5030A	50A	30Arms	100MHz	30A/5A

Notes on Safety

This device is designed to comply with IEC 61010 Safety Standards, and has been thoroughly tested for safety prior to shipment. However, mishandling during use could result in injury or death, as well as damage to the device. Be certain that you understand the instructions and precautions in the manual before use .We disclaim any responsibility for accidents or injuries not resulting directly from device defects.

WARNING

To avoid short circuits and potentially life-threatening hazards, follow these precautions:

- Never attach the clamp to a circuit that operates at more than the maximum rated voltage to earth.
- For safety's sake,avoid clamping around bare conductors,while clamping or measuring.
- While clamping and measuring, do not touch the clamp in front of the barrier orthe conductor being measured.
- Be careful to avoid damaging the insulation surface while taking measurements.
- Make sure that the waveform measuring equipment connected to this device's output terminal (BNC) is equipped with a protective earthing with double-insulation construction.
- Do not allow the device to get wet, and do not take measurements with wet hands. This may cause an electric shock.
- If the waveform measuring instrument being connected to the output terminal(BNC) on this device is equipped with any other measurement terminals, take the following precautions to ensure that the other instrument does not form a bridge between the probe and any hazardous live part of a part.
  1. Isolate the terminal to which the probe is connected from other terminals on the measuring instrument using basic insulation conforming to the measurement category, working voltage, and pollution degree requirements of the circuit being tested.
  2. If basic insulation requirements cannot be met between the terminal to which this device is connected and other terminals of the measuring instrument, make sure that the voltage input to the measurement terminal does not exceed the Separated Extra- Low Voltage Earthed.
  3. Read and observe all warnings and precautions relating to electrical safety for the measuring instrument being connected to the probe.

CAUTION

- To avoid damage to the device, protect it from vibration or shock during transport and handling, and be especially careful to avoid dropping.
- Do not store or use the device where it could be exposed to direct sunlight, high temperature, humidity, or condensation. Under such conditions, the device may be damaged and insulation may deteriorate so that it no longer meets specifications.
- Before using the device the first time, verify that it operates normally, to ensure that the no damage occurred during storage or shipping. If you find any damage, contact your dealer or **SIGLENT** representative.
- The matching surfaces of the sensor head are precision ground, and should be treated with care. If these surfaces are scratched, performance may be impaired.
- This device is not designed to be entirely water- or dust- proof. To avoid damage, do not use it in a wet or dusty environment. The sensor head is a precision assembly including a molded component, a ferrite core, and a Hall effect element. It may be damaged if subjected to sudden changes in ambient temperature, or mechanical train or shock, and therefore great care should be exercised in handling it.
- Foreign substances such as dust on the contact surfaces of the sensor head can cause acoustic resonance and degrade measurement, so it should be cleaned by gently wiping with a soft cloth.
- To avoid damaging the sensor cable and power supply cable, do not bend or pull the cables.
- When the power is on, keep closed, except when clamping them onto the conductor to be measured. The facing surface of the core section can be scratched while it is open.

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Summary

The CP8000 series uses a combination of Hall effect and transformer technology which enables measurements to be made on DC, AC and impulse currents. It's key features include highly accurate current measurements, wide bandwidth, easy current measurements,DC/AC measure, over-current protected and indication(buzzer and LED indicator), double ranges selection,low current measurements, degauss and auto zero function.
CP5030 with 50 MHz bandwidth and CP5030A with 100MHz bandwidth isdesigned to measure continuous currents up to 30 Arms.
CP5150 has a 12 MHz bandwidth and is designed to measure continuous currents up to 150Arms.
CP5500 has a 5 MHz bandwidth and is designed to measure continuous currents up to 500 Arms.

Key features

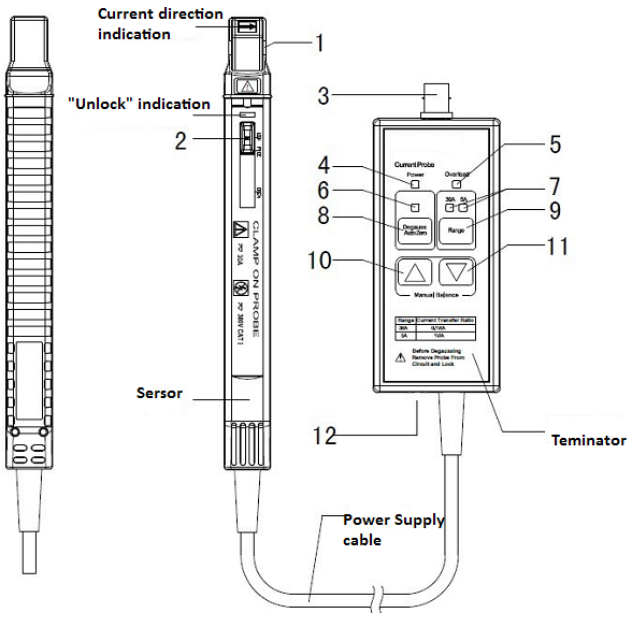
- Highly accurate current measurements
- Easy current measurements
- Wide bandwidth
- DC/AC measure
- Over-current protected

Application

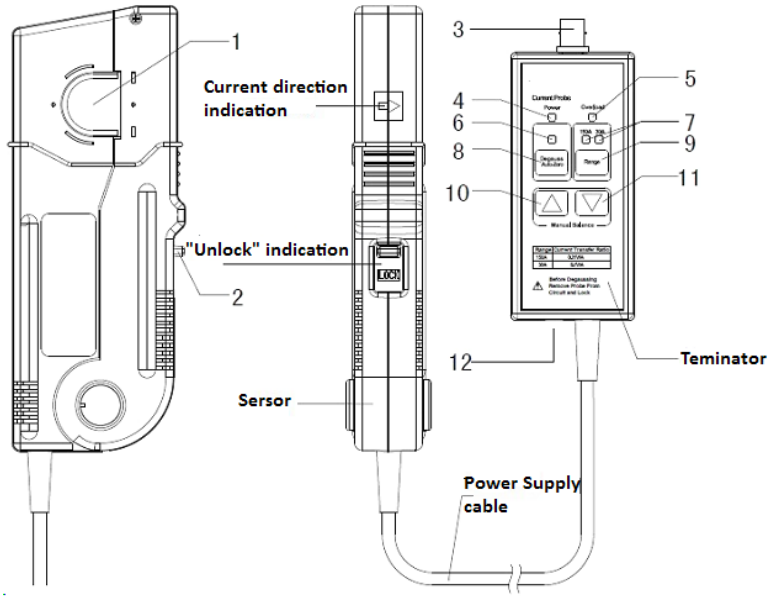
- Switching power supply
- LED lighting design
- Semiconductor Devices design
- Inverter/ transformer design
- Electronic ballast design
- Engine driven design
- Electric vehicle design

Description of Probe Parts

1）CP5030 CP5030A



2) CP5150 CP5500



1. Sensor head

2 Current Probe

This clamps the conductor being measured, and carries out the actual current measurement. It is a precision assembly including a molded component, a ferritecore,and a Hall effect element. It may be damaged if subjected to suddenchanges in ambient temperature, or mechanical strain of shock, and therefore great care should be exercised in handling it.

2.Opening lever

Operating lever for opening the sensor head. Always use this lever to open the sensor head.

3.BNC output connector

Connect to the BNC input connector of the oscilloscope. The output of the current probe is terminated internally. You must select the input impedance of the oscilloscope to be 1 MΩ in order to make accurate measurements. If the oscilloscope you are using does not have a 1 MΩ input impedance setting you can purchase 50 Ω to 1 MΩ adapter.

4.Power indicator LED

When the power adapter is plugged ,the green LED lights.

5.Overload indicator LED

When the current measured exceed the range,the red LED lights and the buzzer alarms.

6.Degauss AutoZero indicator LED

When the key(Degauss AutoZero) pressed, this green LED lights. If degaussing succeed,the buzzer well make double short sound. If degaussing failed,the buzzer will make a long sound.

7.Range indicator LED

The green LED indicates the selected range.

8.Degauss AutoZero Key

When the key is pressed, the probe will be degaussing and AutoZero,about 5 secs.

9.Range selected Key

When the key is pressed, the probe will switch the range.

The CP5030/A has two ranges(30A and 5A).The Current Transfer Ratio is 0.1V/A and 1V/A.

The CP5150 has two ranges(150A and 30A).The Current Transfer Ratio is 0.01V/A and 0.1V/A.

The CP5500 has two ranges(500A and 75A).The Current Transfer Ratio is 0.01V/A and 0.1V/A.

10.Offset (Up)Key

When the key is pressed, the offset increased.

11.Offset (Down)Key

When the key is pressed, the offset decreased.

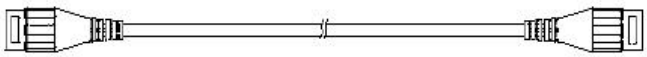
12.Power plug

Connect this to the power adapter(DC 12V/1.2A).

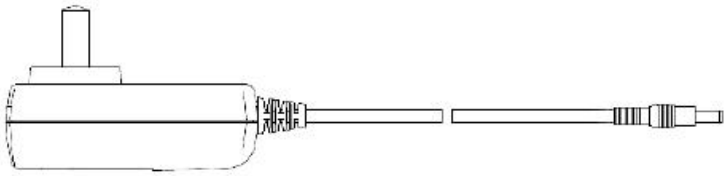
13.Coarse adjustment trimmer

This adjustment should only be carried out if the probe offset is outside the range of the zero adjustment dial.

Accessories



BNC Cable :100cm,MALE X MALE (CK-310)



Power Adapter (12V/1.2A) (CK-612)

Normal and Typical Characteristics

Model	**CP5030**	**CP5030A**	**CP5150**	**CP5500**
BW（-3dB）	DC-50MHz	DC-100MHz	DC-12MHz	DC-5MHz
Rise time	≤7ns	≤3.5ns	≤29ns	≤70ns
Continuous maximum input range	30Arms	30Arms	150Arms	500Arms
Max peak current value	50A	50A	300A	750A
Range	5A(1X)	5A(1X)	30A(10X)	75A(10X)
	30A(10X)	30A(10X)	150A(10X)	500A(100X)
Overload	5A(≥5A)	5A(≥5A)	30A(≥30A)	75A(≥50A)
	30A(≥50A)	30A(≥50A)	150A(≥300A)	500A(≥500A)
Current Transfer Ratio	5A(1V/A)	5A(1V/A)	30A(0.1V/A)	75A(0.1V/A)
	30A(0.1V/A)	30A(0.1V/A)	150A(0.01V/A)	500A(0.01V/A)
Measurement Resolution	5A(1mA)	5A(1mA)	30A(5mA)	75A(5mA)
	30A(10mA)	30A(10mA)	150A(50mA)	500A(50mA)
Amplitude Accuracy	5A(±1%±1mA)	5A(±1%±1mA)	30A(±1%±10mA)	75A(±1%±10mA)
	30A(±1%±10mA)	30A((±1%±10mA)	150A((±1%±100mA))	500A((±1%±100mA))
Input impedance	*Figure 3-1*	*Figure 3-2*	*Figure 6*	*Figure 9*
Power Supply	DC 12V/1.2A			
Max. rated voltage to earth	300V CAT I		600V CAT II 300V CAT III	
Safety standards	IEC 61010-1:2010 IEC 61010-2-32:2012 EN 61010-1:2010 EN 61010-2-32:2012			

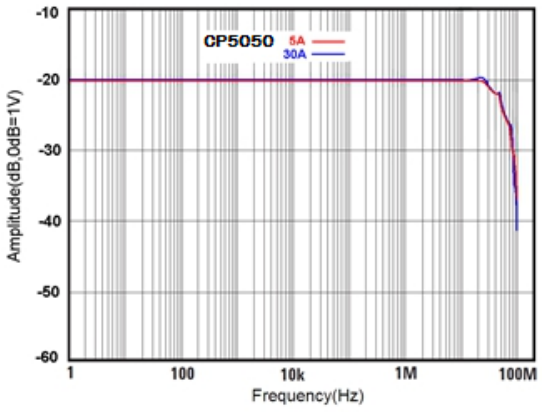


Figure 1-1 CP5030 Frequency response

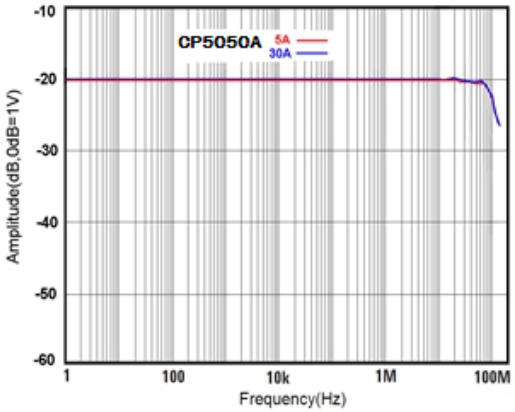


Figure 1-2 CP5030A Frequency response

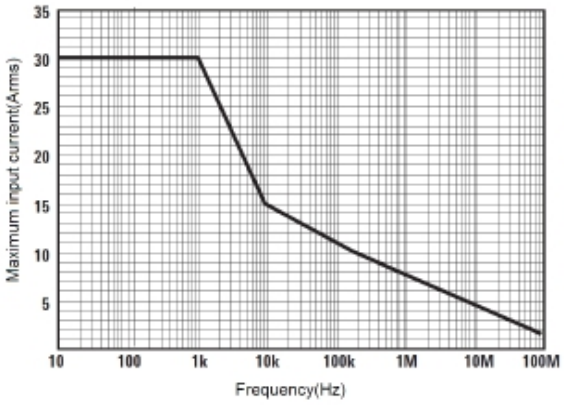


Figure 2-1 CP5030 Continuous maximum input rating (Frequency derating)

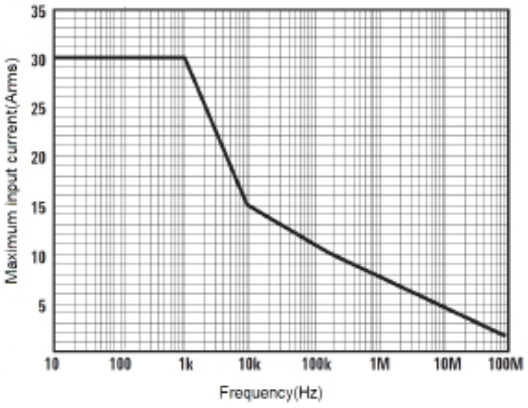


Figure 2-2 CP5030A Continuous maximum input rating(Frequency derating)

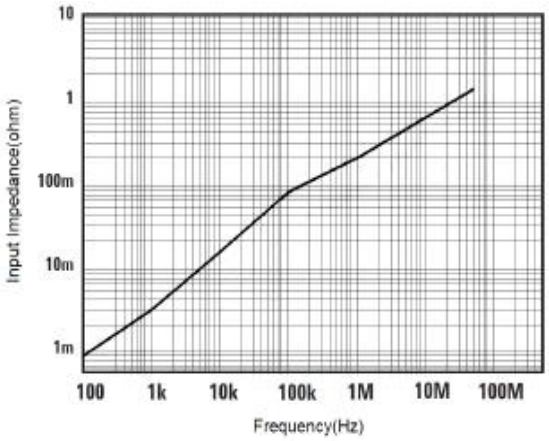


Figure 3-1 CP5030 Input impedance VS Frequency

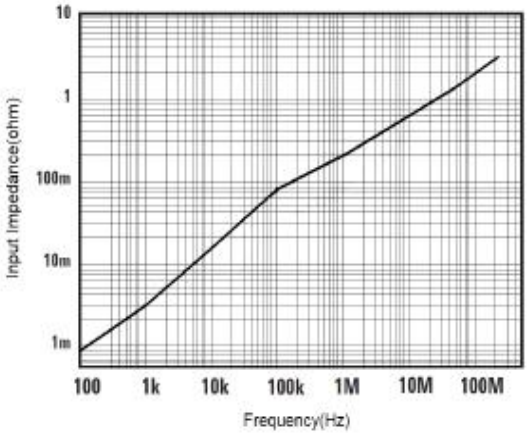


Figure 3-2 CP5030A Input impedance VS Frequency

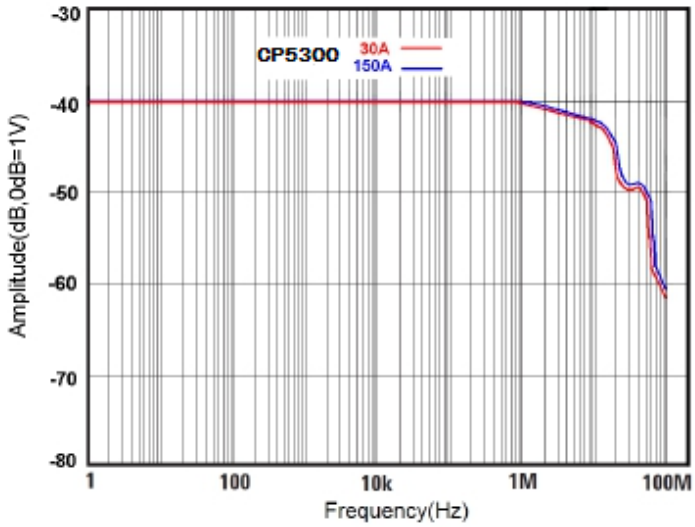


Figure 4 CP5150 Frequency response

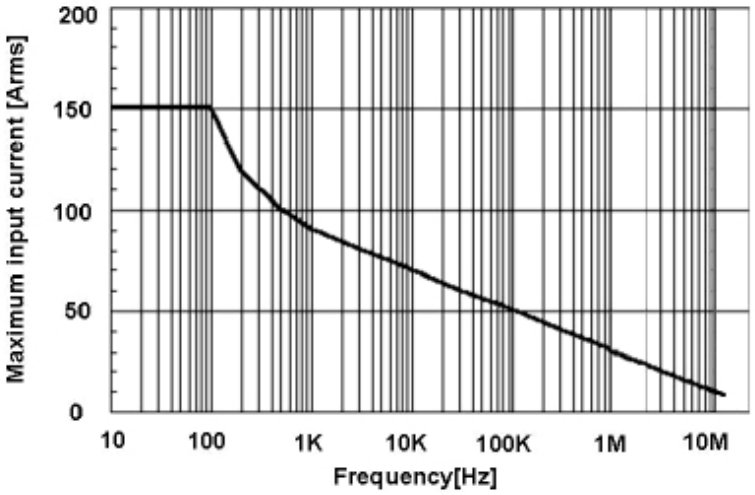


Figure 5 CP5150 Continuous maximum input rating (Frequency derating)

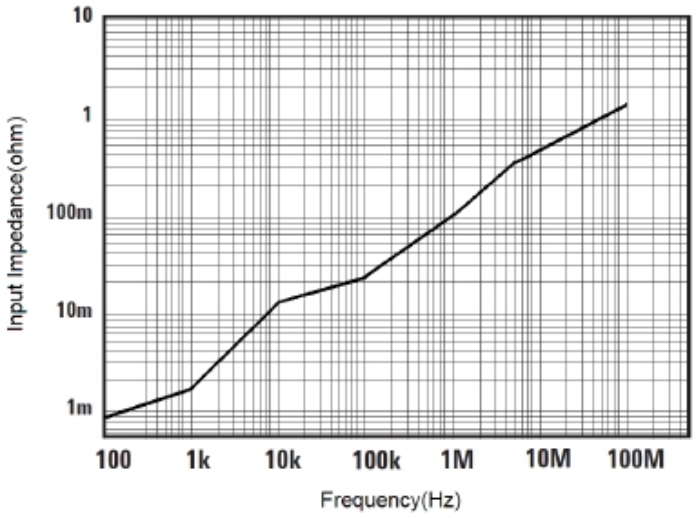


Figure 6 CP5150 Input impedance VS Frequency

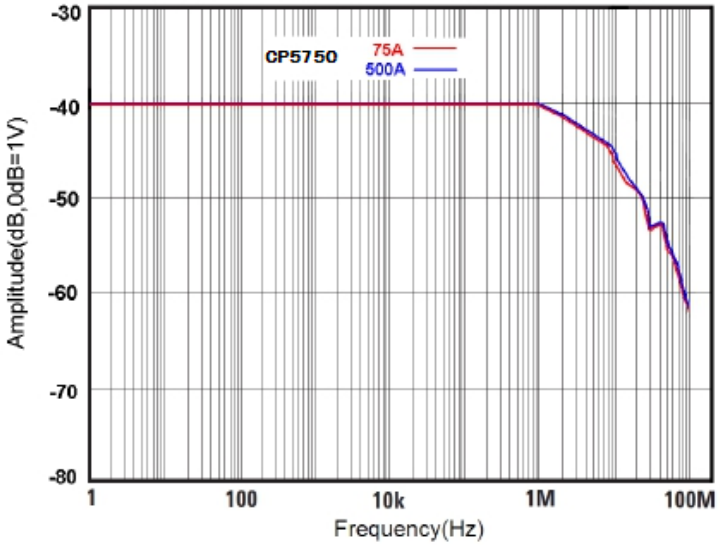


Figure 7 CP5500 Frequency response

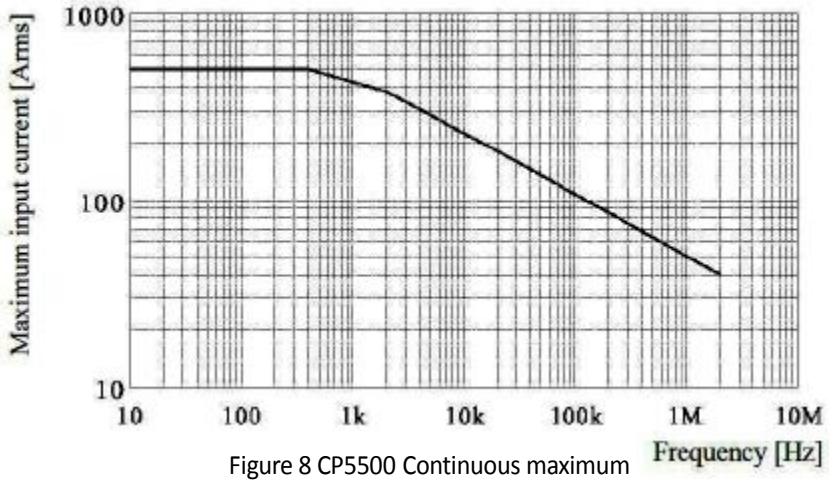


Figure 8 CP5500 Continuous maximum input rating (Frequency derating)

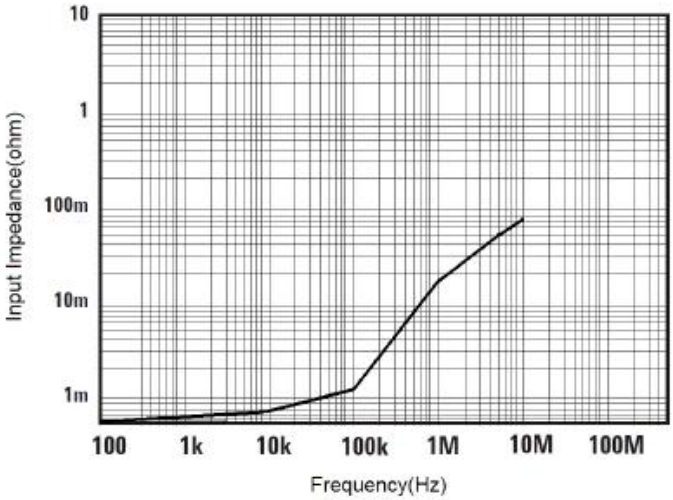


Figure 9 CP5500 Input impedance VS Frequency

Mechanical Characteristics

Model	CP5030	CP5030A	CP5150	CP5500
Measurement Conductor Diameter Max.	5mm		20mm	
Cable Length	1m		1.5m	
BNC Length	100cm			
Power Adapter Dimensions	72*62*31mm; Cable length 1.5m			
Current Clamp Dimensions （L*W*H）	75*40*18mm		175*68*29mm	
Termination Unit（L*W*H）	119*49*28mm			
Probe Weight	240g		500g	510g

Environmental Characteristics

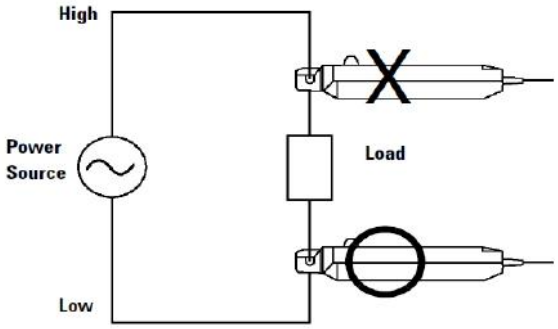
Model	CP5030	CP5030A	CP5150	CP5500
Operating Temperature and Humidity	0℃～40℃，80%RH or less			
Nonoperating Temperature and Humidity	-10℃～50℃，80%RH or less			
Operating Altitude	2000m			
Nonoperating Altitude	12000m			

Measurement Procedure

Attentions: **Note**

- The output of this unit is terminated internally. Use a high impedance input to themeasuring instrument. Accurate measurements are not possible when the input impedance of the scope is set to 50 Ω. Besure to set the input impedance to 1 MΩ before making measurement.
- Immediately after powering on the probe, the probe maybe subject to anappreciable offset drift due to the effect of self- heating. To counteract this, allow the probe towarm up for about 30 minutes before carrying out measurement.
- When performing continuous measurements, it is necessary to be aware that the offset voltage drifts, depending on factors such as the ambient temperature.
- Depending on the measured current frequency, some sound maybe produced by resonance, but has no effect on measurements.

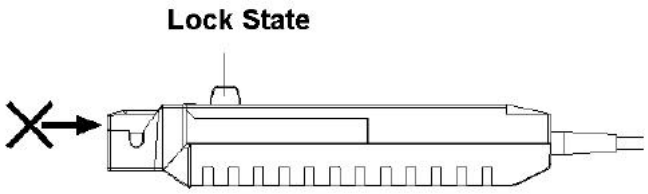
- The reading may be affected by the position within the clamp aperture of the conductor being measured. The conductor should be in the center of the clamp aperture.
- When carrying out a measurement, press the opening lever until the “UNLOCK” indication disappears and check that the sensor head is properly closed. If the sensor head is not properly closed, an accurate measurement is not possible.
- Accurate measurement may be impossible in locations subject to strong external magnetic fields, such as transformers and high- current conductors, or in locations subject to strong external electric fields, such as radio transmission equipment.
- At high frequencies, common mode noise may affect measurements taken on the high voltage side of circuits. If this occurs, reduce the frequency range of the waveform measuring instrument or clamp onto the low- voltage side of the circuit, as appropriate.



WARNING

- When disconnecting the output connector, be sure to release the lock, then pull the connector. Forcibly pulling the connector without releasing the lock, or pulling on the cable will result in damage to the terminator.
- Do not demagnetize while the conductor being measured is clamped. This could damage the components of the circuit being measured.
- The maximum continuous input range is based on heat that is internally generated during measurement. Never input current in excess of this level. Exceeding the rated level may result in damage to the probe.
- The maximum continuous input range varies according to the frequency of the current being measured. See the figures in “Specifications”.
- If excess current is input, generated heat activates a built- in safety function that blocks normal output. If this happens, remove the input immediately (remove the sensor from the conductor being measured or reduce the input current to zero). Wait until the sensor has had sufficient time to cool before resuming operation.
- Even if the input current does not exceed the rated continuous maximum,continuous input for an extended period of time may result in activation of thesafety circuit to prevent damage resulting from heating of the sensor.
- At high ambient temperatures, the built- in safety circuit may activate at current input levels below the rated continuous maximum.

- Continuous input of current exceeding the rated maximum or repeated activation of the safety function may result in damage to the unit.
- The probe is rated for maximum input under two conditions in addition to the input maximums shown in the “Characteristics ". Such as CP8030A,these are (1) 30 Apeak for continuous input and (2) 50 Apeak for pulse widths 10 μs. (1) indicatesan upper waveform response limit of 30 Apeak. Use the sensor at RMS current input levels that are within the rated continuous maximums. (2) indicates the upper response limit for a single input pulse.
- When opening the sensor head of the probe, be sure to operate with the opening lever. If an upper core is forced to open when the sensor head is locked, the open-close mechanism can be damaged.



Preparations for Measurement：

1) Have the power supply and oscilloscope ready for waveform measurement ready.
2) CP8000 series connects the power supply，the red LED lights.

Range select and Degauss AutoZero：

1) With the oscilloscope input at ground, adjust the trace to the zero position.
2) Set the input coupling of the oscilloscope to DC.
3) Connect the output connector of the current probe to the input connector ofthe oscilloscope. Turn the collar until it clicks, and check that it is locked securely.
4) Without clamping the conductor to be measured, press the opening lever until the "UNLOCK" indication disappears, and check that the sensor head is properly closed.
5) Select appropriate “Range” via the Range Key.
6) Press the “Degauss AutoZero” key, if succeed, continue to next step. If failed, make sure the probe locked or other problems.

Making the Measurement：

1) Check that the system is safe and that the preparations described in the preceding section have been carried out.
2) Pull the sensor opening lever wit h the sensor head opens.
3) Align the sensor so that the current direction indication corresponds to the direction of current flow through the conductor to be measured. Also, align the clamp so that the conductor is in the center of the sensor aperture.
4) Press the opening lever on the sensor head until the "UNLOCK" indication disappears. Also check that the opening lever is firmly locked and the sensor head securely closed.

Service Strategy

Problem	Possible cause	Processing methods
Can't measuring DC	Power off	Power on
	Oscilloscope set AC mode	Oscilloscope set AC mode
	Sensor is not locked	Lock the sensor
Can't adjust to zero	Sensor with magnetization	Demagnetization and Zero Adjustment
	Zero Adjustment out of range	Turn the coarse adjustment trimmer
Measuring amplitude is small in all frequency	Oscilloscope with 50Ω input	Oscilloscope with 1MΩabove input

List of goods

List of goods	
Name	**Quantity**
PROBE	1
DC-12V/1.2A Adapter	1
Tool Bag	1
BNC Cable	1
Instruction Manual	1
Test Report	1

CP4000 Series Current Probe

CP4000 Series Summary

Model	Peak Current	Continuous Maximum Input Range	BW(-3dB)	Range switch
CP4070A	200A	70Arms	300kHz	100mV/A
				10mV /A
CP4070	200A	70Arms	150kHz	50mV/A
				5mV /A
CP4050	140A	50Arms	1MHz	500mV/A
				50mV /A
CP4020	60A	20Arms	100kHz	50mV/A
				5mV /A

General Safety Instructions

Read the following safety instructions to avoid injury and prevent damage to this product or any products connected to it. Use this product only as specified.

- **Only qualified personnel should perform service procedures.**
- **To avoid fire or Personal injury.**
- **Connect and Disconnect Properly.** Connect the probe output to the measurement instrument before connecting the probe to the circuit under test. Disconnect the probe input and the probe ground from the circuit under test before disconnecting the probe from the measurement instrument.
- **Observe All Terminal Ratings.** To avoid fore or shock hazard, observe all rating and markings on the product. Consult the instruction manual for further ratings information before marking connections to the product.
- **Replace Batteries Properly.** Replace batteries only with the proper type and rating specified.
- **Do Not Operate Without Covers.** Do not operate this product without the covers or panels.
- **Avoid Exposed Circuitry.** Do not touch exposed connections and components when power is present.
- **Do Not Operate With Suspected Failures.** If you suspect there is damage to this product , have it inspected by qualified service personnel.
- **Do Not Operate in Wet/Damp Conditions.**
- **Do Not Operate in an Explosive Atmosphere.**
- **Keep Product Surfaces Clean and Dry.**

Safety Terms and Symbols

Terms in this manual. These terms may appear in this manual:

WARNING. Warning statements identify conditions or practices that could result in injury or loss of life.

CAUTION. Caution statements identify conditions or practices that could result in damage to this product or other property.

Terms on the Product. These terms may appear on the product:

DANGER indicates an injury hazard immediately accessible as you read the marking.

WARNING indicates an injury hazard not immediately accessible as you read the marking.

CAUTION indicates a hazard to property including the product.

Symbols on the Product. These symbols may appear on the product:

Attention refer to operation Instructions.

This instrument has double insulation.

Getting Started

The CP4000 series current probe enables a general purpose oscilloscope to display AC and DC current signals up to 100 amps Peak (70A RMS). The current probe can also make AC and DC measurements with a multimeter by using the recommended accessory MT-246(BNC-to- banana) plug adapter.

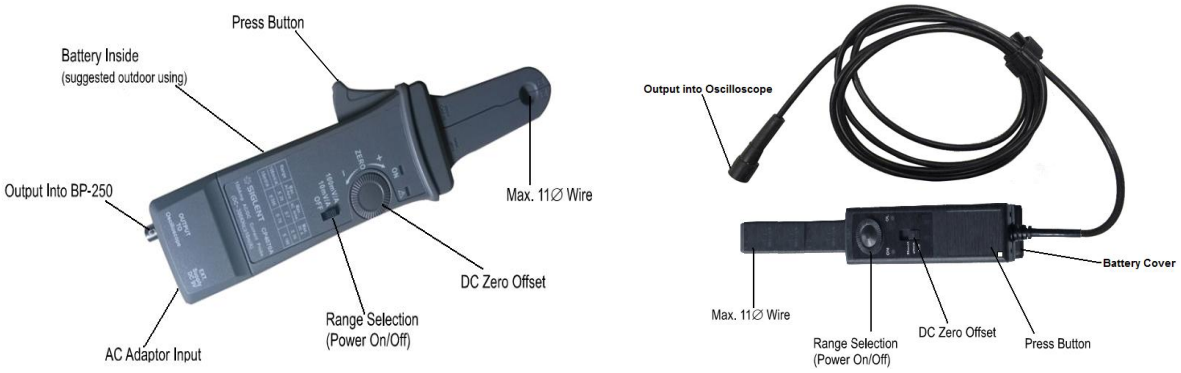
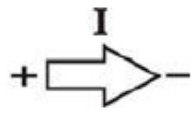
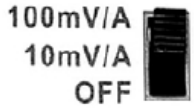
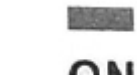


Figure 1 shows the controls and indicators

CP4000 series controls and indicators

Control/Indicator	Description
	**Current flow symbol.** The arrow shows the probe's polarity convention for measuring current flowing from positive to negative.
	**Zero adjustment.** Rotate to adjust the probe output to zero when there is no current present. It may also be used to offset a DC signal component. Zeroing is not needed for AC measurements unless your instrument cannot isolate a DC component(if present).
	**OFF/Range switch.** Slide the switch from OFF to either the 10mV/A or 100mV/A range. When either range is selected, the probe is turned on, and the green battery indicator lights.
	**Battery indicator.** The green battery indicator lights when the probe is turned on. For more information, see Battery Notes and Battery Installation on Page 11.
	**Overload indicator.** The red overload indicator lights if the measured signal is greater than the selected range capacity. Switch the probe to 10 mV/A if possible, or remove the probe from the circuit.

Basic Operation

Before using the probe, the batteries or specified power adaptor must be installed.

⚠ WARNING!

DO not clamp the probe onto circuits with voltages greater than 600 VAC. Personal Injury or damage to the probe may result. Always connect the CP4000 current probe output to the instrument before clamping onto the circuit under test.

1. First connect the current probe BNC connector to BP-250(double BNC connection cable) ,then connect to oscilloscope input. Start by setting the oscilloscope voltage input channel to DC coupling, and the voltage scale to 100m V/div.
2. Move the OFF/Range switch to the 10mV/A or 100mV/A position to turn on the probe. (※The CP4070A has a green LED power/battery indicator. If the LED does not light, replace the battery or use specified power adaptor.)
3. Use the ZERO adjustment to zero or offset the probe output detection of residual magnetic DC charges.
4. Connect the probe to the circuit by opening the jaws and clamping around the conductor. See Figure 2.

(※**NOTE. Clamping around both the "hot" and neutral wires may give youy a zero reading.** (Remember to unclamp the probe from the conductor before disconnecting it from your meter or instrument.)

Figure 2 Connecting the CP4070A

5. Adjust the probe channel and oscilloscope's time base as necessary to get a clear and stable view of the signal. Set the oscilloscope input to DC volts ti see both the AC and DC current; set the channel to AC to see the AC current only. The current drawn by different devices look much different than that of others. While the RMS current can only be used in low frequency current, the momentary peaks may be quite high. Figure 3 shows the difference between the line current drawn by a resistive load and a motor controller.

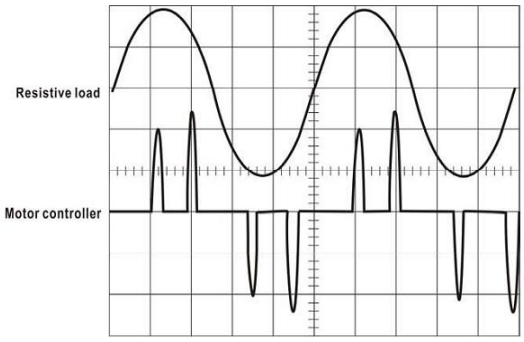


Figure 3 Typical current waveform

Congratulations on your purchase of CP4000 series, a multifunctional current probe. When connecting to a digital meter, use the recommended MT-246N (BNC to banana adapter). Connect the black lead to the meter COM, and the red lead to the VΩ input . To measure only AC current, set the meter to measure AC volts. To measure DC current, set the meter to measure DC volts. Note the current convention arrow on the probe to get the proper polarity reading. To increase the measurement sensitivity of CP4000, loop sensitivity of CP4000 is multiplied times the number of loops in the jaws. For example: 10mV/A * 4 turns=40mV/A

Figure 4 increasing the sensitivity

Specifications

Model	**CP4020**	**CP4050**	**CP4070**	**CP4070A**
BW（-3dB）	DC-100kHz	DC-1MHz	DC-150kHz	DC-300kHz
Rise time	≤3.5uS	≤0.35uS	≤2.3uS	≤1.2uS
Continuous maximum input range	20Arms	50Arms	70Arms	70Arms
Max peak current value	60A	140A	200A	200A
Range switch	50mV/A	500mV/A	50mV/A	100mV/A
	5mV /A	50mV /A	5mV /A	10mV /A
DC Accuracy (Typical)	±2% （0.4A-10ApK） at 50mV/A ±2% （ 1A-60ApK ） at 5mV/A	±3%±20mA （20mA-14ApK） at 500mV/A； ±4%±200mA （ 200mA-100ApK）at 50mV/A； ±15% max （100A-140ApK） at 50mV/A；	±2% （0.4A-10ApK） at 50mV/A ±2% （1A-200ApK） at 5mV/A	±3%±50mA （50mA-10ApK） at 100mV/A； ±4%±50mA （500mA-40ApK） at 10mV/A； ±15% max （ 40A-100ApK ） at 100mV/A；

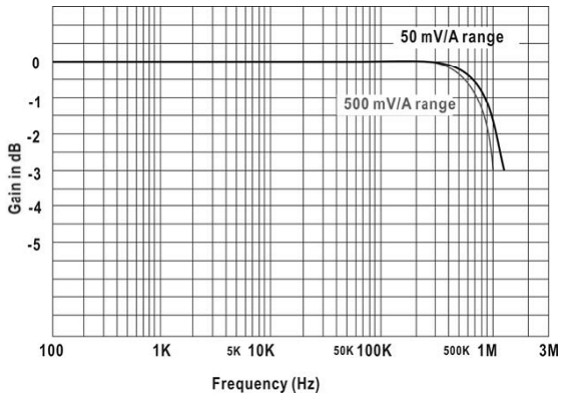
Power Supply	9V battery
Maximum working Voltage	300V CAT III 600V CAT II
Maximum working Voltage	

Mechanical Specifications

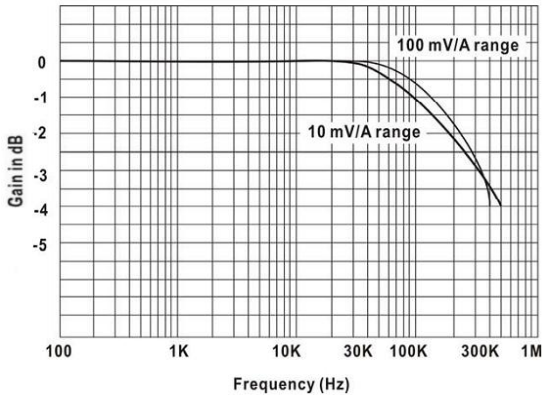
Model	**CP4020**	**CP4070**	**CP4050**	**CP4070A**
Dimensions	231*67*36mm		262*81*36mm	280*70*32mm
Maximum Conductor size	10.3mm		10.3mm	11mm
Cable Length	200cm		100cm	100cm
Weight	310g		310g	260g

Environmental Characteristics

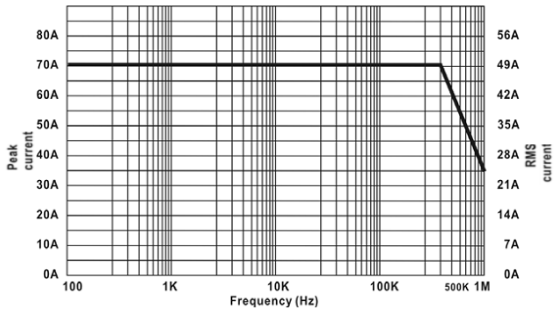
Model	**CP4020**	**CP4070**	**CP4050**	**CP4070A**
Operating Temperature	0℃～50℃ (+32°F ～ + 122°F)			
Nonoperating Temperature	-20℃～80℃(-20°F ～ + 80°F)			
Humidity	0℃～40℃，95%RH 40℃～50℃，45%RH			
Pollution Degree	2			



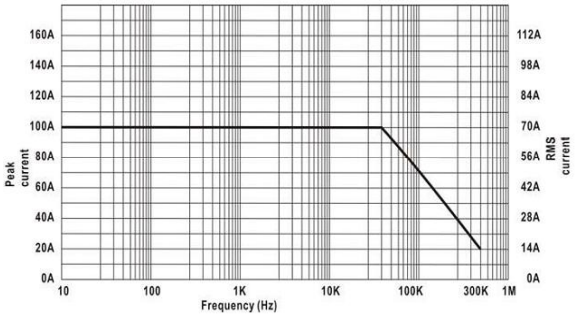
CP4050 Gain versus frequency at 1A peak



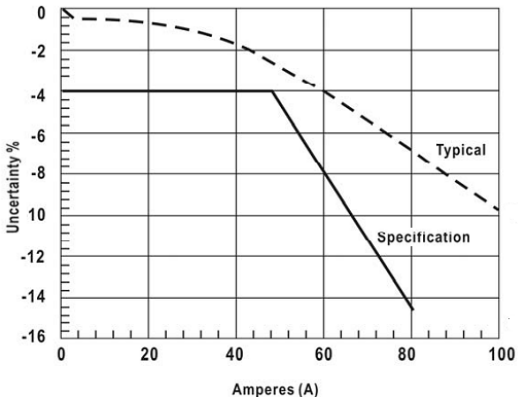
CP4070A Gain versus frequency at 1A peak



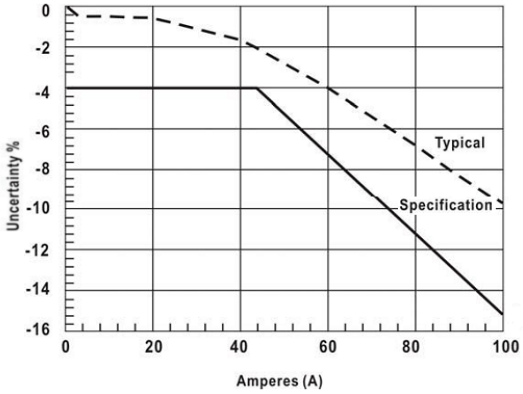
CP4050 Maximum current versus frequency



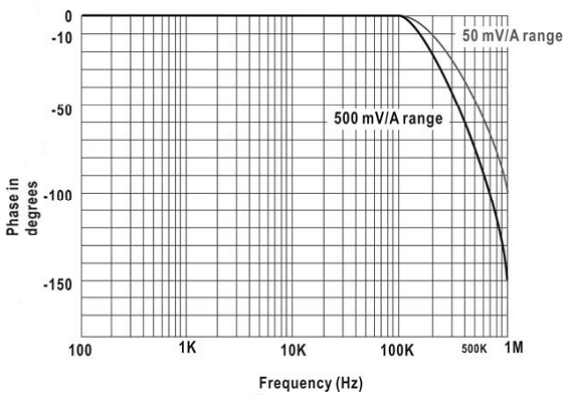
CP4070A Maximum current versus frequency



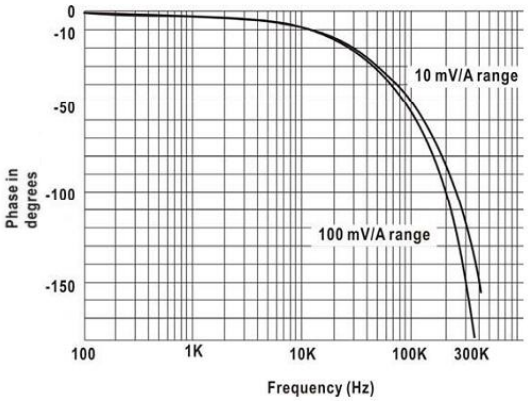
CP4050 DC signal linearity in the 50mV/A range



CP4070A DC signal linearity in the 10mV/A range



CP4050 Phase versus frequency at 1A peak



CP4070A Phase versus frequency at 1A peak

Certifications and compliances

EC Declaration of Conformity Low Voltage	Compliance was demonstrated to the following specification as listed in the Official Journal of the European Union: Low Voltage Directive 73/23/EEC,as amended by 93/68/EEC **EN 61010-1/A2:1995** Safety requirements for electrical equipment for measurement, control, and laboratory use. **EN 61010-2-032:1995** Particular requirements for hand-held current clamps foe electrical measurement and test equipment.
Additional Compliance	**IEC61010-1/A2:1995** Safety requirements for electrical equipment for measurement, control, and laboratory use. **IEC61010-2-032:1994** Particular requirements for hand-held current clamps foe electrical measurement and test equipment.
Installation (Over voltage) Category	Terminals on this product may have different installation (over voltage) category designations. The installation categories are: **CAT III** Distribution-level mains (usually permanently connected). Equipment at this level is typically in a fixed industrial location **CAT II** Local-level mains (wall sockets). Equipment at this level includes appliances, portable tools, and similar products. Equipment is usually cord-connected. **CAT I** Secondary (Signal level) or battery operated circuits of electronic equipment.
Pollution Degree	A measure of the contaminates that could occur in the environment around and within a product. Typically the internal environment inside a product is considered to ne the same as the external. Products should be uses only in the environment for which they are rated. **Pollution 1** No pollution or only dry, nonconductive pollution occurs. Product in this category are generally encapsulated, Hermetically sealed, or located in clean rooms. **Pollution 2** Normally only dry, nonconductive pollution occurs. Occasionally a temporary conductivity that is caused by condensation must be expected. This location is a typical office/home environment. Temporary condensation occurs only when the product is out of service.

Accessory

Care and Maintenance

1) Keep the probe clean and dry.
2)Please wipe with soft dry cloth when clean needed, must not use chemicals to clean.
3)Please put the probe in the package provided, and put it in cool, clean and dry places.
4)Please put the probe in the package provided to prevent shock.
5)Do not forcefully pull the input and output lead to prevent bending, twisted and folding.

Contact SIGLENT

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