Contents [hide]

PINTECH

PINTECH N Series Differential Probe

General

Thank you for purchasing PINTECH oscilloscope differential probe, we will serve you wholeheartedly!

Please read this user manual carefully before use and pay attention to safety measures.

Symbol

 Please read this user manual carefully before use.

If haven’t follow the signs or haven’t read the user manual before use ,may result in personal injury or damage to the equipment and device.

- Pay attention to the risk of electric shock and pay attention to the highest input voltage.
- Do not use in a humid environment or where there is a risk of explosiveness.
- Before connecting the probe, make sure the circuit under test is turned off.
- At the end of the measurement, turn off the circuit under test and then turn off the probe switch.
- Before use ,if the differential probe is damaged, please stop using it.
- Please use PINTECH supply adaptor.

Introduction

Differential probe provides a safety means for measuring differential voltage to all models of oscilloscopes It can convert the high differential voltage into a low voltage(<7V)and display on the oscilloscope. Its bandwidth is up to 200MHz,which is ideal for big power testing ,development and maintain.

The Differential probe is designed to operate with the 1MΩ impedance oscilloscopes. When combine with the 50Ω load , the attenuation will be 2 times. It can be widely used in the research and development, debugging or maintenance of switching power supplies, frequency converters, electronic ballasts, frequency conversion appliances and other electrical power devices.

Specification

Model	N1008A	N1008B	N1015A
Bandwidth(-3dB)	DC-50MHz	DC-100MHz	DC-100MHz
Attenuation ratio	1:100/10	1:100/10	1:1000/100
Rise Time	7ns	3.5ns	3.5ns
Accuracy	±1%	±1%	±1%
Input voltage Vp-p	800V@1/10080V@1/10	800V@1/10080V@1/10	1500V@1/1000150V@1/100
Input voltage(DC)/ common mode voltage	400V	400V	750V
differential mode voltage	400V@1/10040V@1/10	400V@1/10040V@1/10	750V@1/100075V@1/100
Input voltage(RMS)	280V	280V	530V
Input resistance	2MΩ//2.5pF4MΩ//1.25pF	2MΩ//2.5pF4MΩ//1.25pF	4MΩ//1.18pF8MΩ//0.59pF

Model	N1000A	N1030A	N1030B
Bandwidth(-3dB)	DC-50MHz	DC-50MHz	DC-100MHz
Attenuation ratio	1:1000/100	1:1000/100	1:1000/100
Rise Time	7ns	7ns	3.5ns
Accuracy	±1%	±1%	±1%
Input voltage Vp-p	1500V@1/1000150V@1/100	3000V@1/1000300V@1/100	3000V@1/1000300V@1/100
Input voltage(DC)/common mode voltage	750V	1500V	1500V
differential mode voltage	750V@1/100075V@1/100	1500V@1/1000150V@1/100	1500V@1/1000150V@1/100
Input voltage(RMS)	530V	1050V	1050V
Input resistance	4MΩ//1.18pF8MΩ//0.59pF	4MΩ//1.18pF8MΩ//0.59pF	4MΩ//1.18pF8MΩ//0.59pF
Common Characteristics			
Output voltage	≤7V		
Oscilloscope intput impedance	1MΩ		
CMRR(typical)	60Hz>80dB 100kHz>50dB		
Power	6V adapter-powered only		

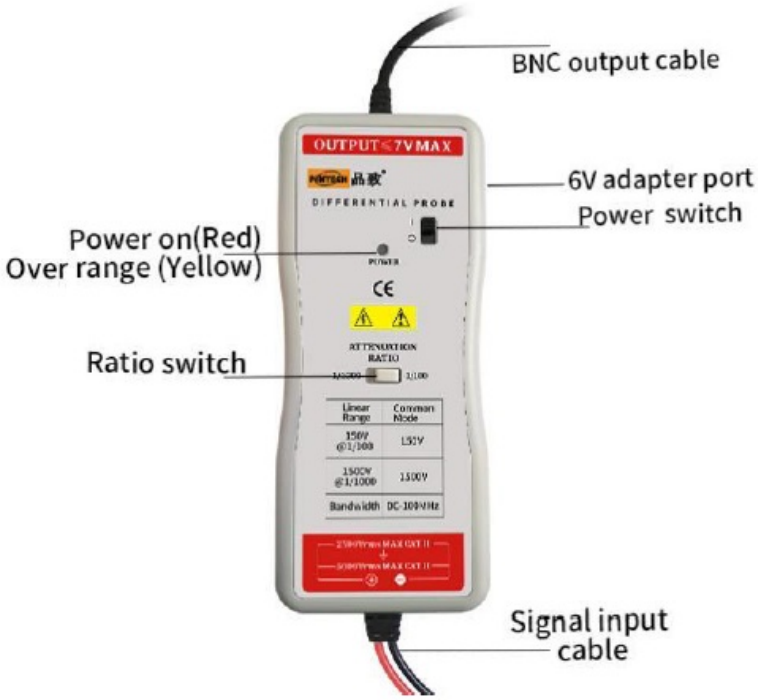
Model	N1070A*	N1070APro*	N1070B*

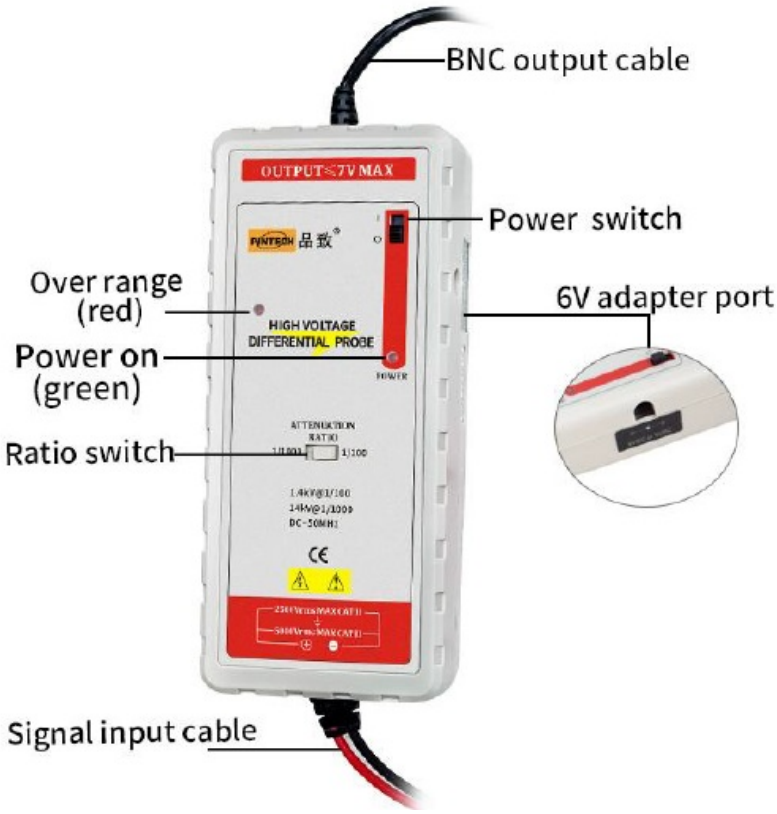
Bandwidth(-3dB)	DC-50MHz	DC-50MHz		DC-100MHz
Attenuation ratio	1:1000/100	1:1000/100		1:1000/100
Rise Time	7ns	7ns		3.5ns
Accuracy	±1%	0.5%(DC-50Hz~1kHz)		±1%
Input voltage Vp-p	7000V@1/1000 700V@1/100			
Input voltage(DC)/ common mode voltage	3500V			
differential mode voltage	3500V@1/1000350V@1/100			
Input voltage(RMS)	2450V			
Input resistance	10MΩ//1pF20MΩ//0.5pF	10MΩ//1pF20MΩ//0.5pF	10MΩ//1pF20MΩ//0.5pF	

Model	N1015B*	N1100A*	N1140A*	N1140APro*
Bandwidth(-3dB)	DC-100MHz	DC-100MHz	DC-100MHz	DC-50MHz
Attenuation ratio	1:500/50	1:1000/100	1:1000/100	1:1000/100

Rise Time	3.5ns	3.5ns	3.5ns	7ns
Accuracy	±1%	±1%	±1%	0.5%(DC-50Hz~1kHz)
Input voltage Vp-p	1500V@1/500150V@1/50	10kV@1/10001kV@1/100	14kV@1/10001.4kV@1/100	14kV@1/10001.4kV@1/100
Input voltage(DC)/ common mode voltage	750V	5000V	7000V	7000V
Differential mode voltage	750V@1/50075V@1/50	5kV@1/1000500V@1/100	7kV@1/1000700V@1/100	7kV@1/1000700V@1/100
Input voltage(RMS)	530V	3500V	4900V	4900V
Input resistance	4MΩ//1.18pF8MΩ//0.59pF	10MΩ//1pF20MΩ/0.5pF	10MΩ//1pF20MΩ//0.5pF	10MΩ//1pF20MΩ//0.5pF
Common Characteristics				
Output voltage	≤7V			

Oscilloscope intput impedance	1MΩ
CMRR(typical)	60Hz>80dB 100kHz>50dB
Power	battery-powered/6V adapter-powered, standard packing include adaptor





Mechanical Specifications:

Item	Specifications
Test cable length	30cm/60cm
BNC output cable	90cm
Probe hook BP-368N	122*38*14.5mm
Dimension mall white machine	165*69*26mm
Dimension big white machine	186*84*38mm
Weight mall white machine	300g
Weight big white machine	400g

Operating environment and conditions

	Reference	Use	Storage
Temperature	+20℃…+30℃	0℃….+50℃	-30℃….+70℃

Humidity	≤70%RH	20%…75%RH	10%…90%RH

- Dimensions 165x69x26mm(N series small white machine); 186x84x38mm(Model with */N series big white machine) Dual insulation
- Installation category Ⅲ
- Degree of Pollution 2
- Related voltage or max line-earth 6500V RMS Max.

Operating instruction

- Connect the output BNC interface of the differential probe(Take N1070A as an example) to the oscilloscope.
- Adjust the vertical switch on the oscilloscope if necessary.
- Adjust the attenuation rate and vertical switch on the oscilloscope to a consistent position.
- The measured voltage value should be estimated before the test, if the voltage range is exceeded, the probe may be damaged.
- Before the probe is turned on, it is best to set the probe ratio to the maximum; The power adapter is plugged into the probe, the green light is on when the probe is power on, when the test voltage exceeds the range, the light is red.
- Set the attenuation ratio of the oscilloscope according to the ratio selected by the probe.
- The probe hook is connected to the object to be measured and start measuring.
- After the test is completed, turn off the circuit under test first, then turn off the probe switch, disconnect the probe hook from the tested circuit, and unplug the BNC interface from the oscilloscope.

Attention)

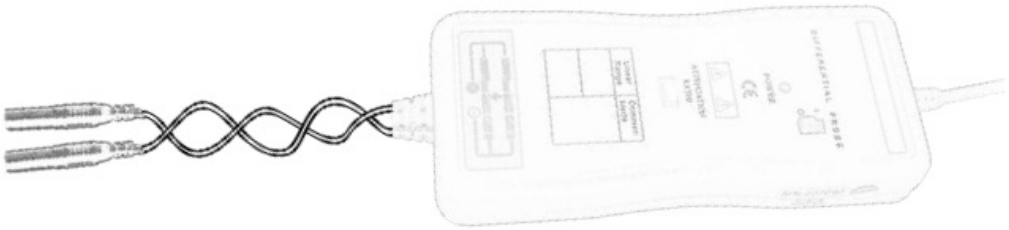
The power must be turned on.

The actual vertical bias is equal to the attenuation multiplied by the vertical bias selected on the oscilloscope, which is twice as high as the 50Ω load used.

When connecting the differential probe BNC output cable to an oscilloscope or other device, ensure that the BNC terminal is securely grounded.

Using precautions

The input cable should be wound as much as possible during the measurement, which can better eliminate the lead inductance and external noise, and improve the high-frequency response and anti-interference ability. Like this:



Better don’t lengthen the input cable, otherwise will get more noise.

Accessories

6V Adapter
W&T-AD1806A060030K
(6V/0.3A)

Probe Hook
BP-368N
(1000V/3A)

Service

Maintenance

For maintenance ,only use specified spare parts. The manufacturer can not be held responsible for any accident arising following a repair made other than its after sales service or approved repairs.

Cleaning

This probe does not require any particular cleaning. If necessary, clean the case with a cloth slightly moistened with the soapy water.

Warranty

Unless notified ,our instruments are guaranteed against any manufacturing defect or material defect. They do not bear the specification known as the safety specification. Our guarantee, which may not under any circumstances exceed the amount of the invoiced price, goes on further than the repair of our faulty equipment, carriage paid to our workshops.

Repair

Maintenance ,repairs under or out of guarantee. Please return the product to the manufacturer.

Model	(-3dB)Bandwidth	(Input Impedance)	(Attenuation Ratio)	Accuracy	(Vp-p)
N1000A	DC-50MHz	8MΩ//0.59pF	1:1000/100	1%	1500V@1/1000150V@1/100
N1015B*	DC-100MHz	8MΩ//0.59pF	1:500/1:50	1%	1500V@1/500150V@1/50
N1008A	DC-50MHz	4MΩ//1.25pF	1:100/10	1%	800V@1/10080V@1/10
N1008B	DC-100MHz	4MΩ//1.25pF	1:100/10	1%	800V@1/10080V@1/10
N1015A	DC-100MHz	8MΩ//0.59pF	1:1000/100	1%	1500V@1/1000150V@1/100

N1030A	DC-50MHz	8MΩ//0.59pF	1:1000/100	1%	3000V@1/10000300V@1/100
N1030B	DC-100MHz	8MΩ//0.59pF	1:1000/100	1%	3000V@1/10000300V@1/100
N1070A*	DC-50MHz	20MΩ//0.5pF	1:1000/100	1%	7000V@1/10000700V@1/100
N1070APro*	DC-50MHz	20MΩ//0.5pF	1:1000/100	0.5%	7000V@1/10000700V@1/100
N1070B*	DC-100MHz	20MΩ//0.5pF	1:1000/100	1%	7000V@1/10000700V@1/100
N1100A*	DC-100MHz	20MΩ//0.5pF	1:1000/100	1%	10kV@1/10001kV@1/100
N1140A*	DC-100MHz	20MΩ//0.5pF	1:1000/100	1%	14kV@1/10001.4kV@1/100
N1140APro*	DC-50MHz	20MΩ//0.5pF	1:1000/100	0.5%	14kV@1/10001.4kV@1/100
N2008APro*	DC-200MHz	18MΩ//1pF	1:1000/100	1%	1kV@1/1000100V@1/100
N2015APro*	DC-200MHz	18MΩ//1pF	1:1000/100	1%	2kV@1/1000200V@1/100

N2040APro*	DC-200MHz	18MΩ//1pF	1:1000/100	1%	4kV@1/1000 400V@1/100
N2060APro*	DC-200MHz	18MΩ//1pF	1:1000/100	1%	6kV@1/1000 600V@1/100

Models with * can be powered by an 6V adapter or 4*AA batteries

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FAQ

What is the purpose of a differential probe?

A differential probe is used to measure differential voltage safely and accurately with oscilloscopes.

What should I do if the differential probe is damaged?

If the differential probe is damaged, it should not be used. Please stop using it and consider getting it repaired or replaced.

Can I use the probe in a humid environment?

It is not recommended to use the probe in a humid environment. Avoid exposing the probe to moisture to prevent damage.

Documents / Resources

	PINTECH N Series Differential Probe [pdf] Instruction Manual N1008A, N1008B, N1000A, N1030A, N1070A, N1070APro, N1070B, N1015B, N1100A, N1140A, N1140APro, N Series Differential Probe, Differential Probe, Probe

References

- User Manual

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Differential Probe, N Series Differential Probe, N1000A, N1008A, N1008B, N1015B, N1030A, N1070A, N1070APro, N1070B, N1100A, N1140A, N1140APro, PINTECH, Probe

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