

N 系列差分探头

N Series Differential Probe

- N2008A
- N2015A
- N2040A
- N2060A



INSTRUCTION MANUAL

使用说明书

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差分探头

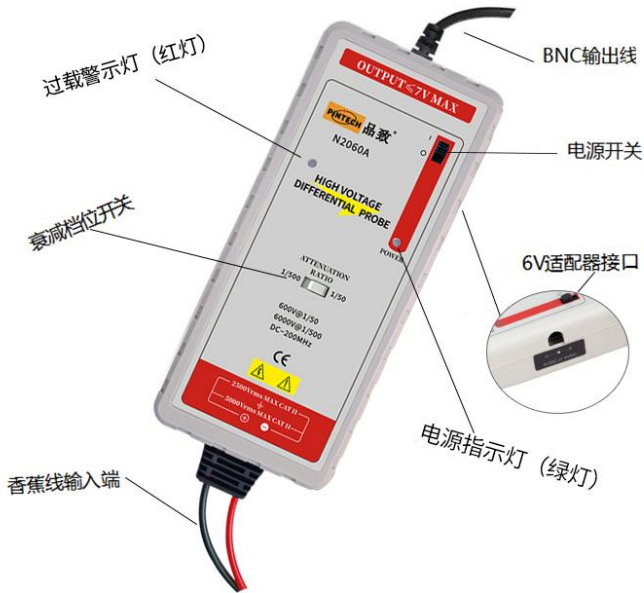
一、简述：

差分探头提供一个安全的仪器给所有的示波器使用，它可以转换由高输入的差动电压进入一个低电压($\leq 7V$)，并且显示波形在示波器上，使用频宽高达 200MHz，非常适合大电力测试、研发、维修使用。

差分探头输出标示是设计在操作示波器 $1M\Omega$ 的输入阻抗的相对衰减量，当使用 50Ω 匹配器进衰减量刚好为 2 倍量。

二、规格：

型号	N2008A	N2015A	N2040A	N2060A
频宽	DC-200MHz (-3dB)			
衰减比例	1:500/50	1:500/50	1:500/50	1:500/50
上升时间	1.75ns	1.75ns	1.75ns	1.75ns
精度	1%	1%	1%	1%
输入电压 V _{p-p}	1000V@1/500 100V@1/50	2000V@1/500 200V@1/50	4000V@1/500 400V@1/50	6000V@1/500 600V@1/50
输入电压 (DC)	500V	1000V	2000V	3000V
输入电压 (RMS)	350V	700V	1470V	2100V
输入阻抗	10M Ω / 1.33pF 5M Ω / 2.66pF			
共同特性				
输出电压	$\leq 7V$			
输出阻抗	50 Ω			
共模互斥 比	-80dB@60Hz, -50dB@100KHz			
电源	6V DC			



带*型号大白机差分探头示意图

三、操作环境及状况

	一般状态	使用操作中	储存
温度	+20℃…+30℃	0℃…+50℃	-30℃…+70℃
湿度	≤70%RH	10%…85%RH	10%…90%RH

(1) 尺寸及重量: 186x84x38mm

(2) 电子安全规范 IEC 1010-1

双绝缘

安装类目III

污染程度 2

相关电压或最大接地: 6500V RMS Max.

CE: EN50081-1 及 50082-1

四、操作程序

差分探头的输出端 BNC 接口与示波器连接。

如有需要先调整示波器上的垂直开关。

将示波器上的衰减率及垂直开关调整到一致的位置。

(注意)

- 电源必须打开。
- 实际的垂直偏向是等于衰减乘上示波器上所选择的垂直偏向，是使用负载 $50\ \Omega$ 的两倍。
- 差分探头 BNC 输出线连接示波器或者其它设备时，确保 BNC 端子可靠接地。

五、配件



6V 适配器
ADP-230
(6V/3A)



探头探钩
BP-368N
(1000V/3A)

六、维修

■ 维护

保养此产品时请使用原厂指定的工具，由其他不被认可的维修人员所做的维修，原厂将不负任何责任。

■ 清洁

此产品不需要任何特定的清洁，如有需要，请用轻软干净的布沾上微量的清洁液轻轻的在产品外观擦拭。

■ 保固

除了在人为上的特意损坏，本产品是受保固并可以维修的，并不包含在安全规范的责任。

保固是以不超出发票上的金额，零件的更换及运送的费用。

保固是仅在正常操作下而造成的损坏，并不包含任何刻意的损坏，操作上的错误，机械上的操作不当，保养不当，负载或过压。原厂的保固是卖出后的 36 个月内，如有任意的非原厂的维修或更换零件，原厂保固将自然取消。

■ 维修

有任何的维修，保养或更换零件是在保固以外，请将产品退回原厂维修。

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Differential probe

一、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 ($\leq 7V$) 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 $1M\Omega$ impedance oscilloscopes. When combine with the 50Ω load, the attenuation will be 2 times.

Differential probe is recommend to use with our own manufactured PL-10N to expand the measuring with the electricity meter to observe more accurate measurement. The accuracy of oscilloscope is 3% and the electricity meter is about 3 times)

二、Specification

Model	N2008A	N2015A	N2040A	N2060A
Bandwidth	DC-200MHz (-3dB)			
Attenuation ratio	1:500/50	1:500/50	1:500/50	1:500/50
Rise Time	1.75ns	1.75ns	1.75ns	1.75ns
Accuracy	1%	1%	1%	1%
Input voltage V _{p-p}	1000V@1/50 1000V@1/50	2000V@1/500 200V@1/50	4000V@1/500 400V@1/50	6000V@1/500 600V@1/50
Input voltage (DC)	500V	1000V	2000V	3000V
Input voltage (RMS)	350V	700V	1470V	2100V
Input resistance	10M Ω / 1.33pF 5M Ω / 2.66pF			
Common Characteristics				
Output voltage	$\leq 7V$			
Output impedance	50 Ω			
CMRR (typical)	-80dB@60Hz, -50dB@100KHz			
Power	6V DC			

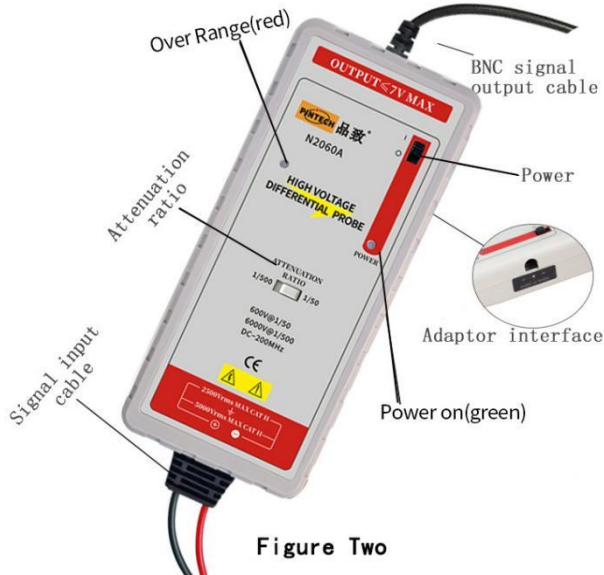


Figure Two

三、Operating environment and conditions

	Reference	Use	Storage
Temperature	+20°C...+30°C	0°C...+50°C	-30°C...+70°C
Humidity	≤70%RH	10%...85%RH	10%...90%RH

(1) Dimensions: 186x84x38mm

(1) Electrical safety to **IEC 1010-1**

Dual insulation

Installation category III

Degree of Pollution 2

Related voltage or max line-earth : 6500V RMS Max.

CE : EN50081-1 and 50082-1

四、 Operating procedure

Connect the probe to the oscilloscope with the BP-250 BNC TO BNC cable.

Adjust the vertical zero adjustment of the oscilloscope if necessary.

Select the attenuation ration and the vertical deviation of the oscilloscope in accordance with the conversion table below.

Note: The power must be on

Attention: The real vertical deviation is equal to the attenuation ration multiplied by the range of vertical deviation selected on the oscilloscope. It will be double in the case of a 50Ω load.

When connecting the differential probe BNC output line to an oscilloscope or other device, ensure that the BNC terminals are reliably grounded.

五、 Accessories



6V Adapter
ADP-230
(6V/3A)



Probe
Hook
BP-368N

六、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.

N 系列有源差分探头选购指南

型号 Model	频宽 Bandwidth (-3dB)	输入阻抗 (Input Impedance)	衰减比例 Atten uation Ratio	精度 Accuracy	最大输入差动 电位 (ACp-p)
N1000A	DC-50MHz	8M Ω //1pF	1:1000/100	1%	1500V@1/1000 150V@1/100
N1015B*	DC-100MHz	8M Ω //1pF	1:500/50	1%	1500V@1/500 150V@1/50
N1008A	DC-50MHz	4M Ω //1.3pF	1:100/10	1%	800V@1/100 80V@1/10
N1008B	DC-100MHz	4M Ω //1.3pF	1:100/10	1%	800V@1/100 80V@1/10
N1015A	DC-100MHz	8M Ω //1pF	1:1000/100	1%	1500V@1/1000 150V@1/100
N1030A	DC-50MHz	8M Ω //1pF	1:1000/100	1%	3000V@1/1000 300V@1/100
N1030B	DC-100MHz	8M Ω //1pF	1:1000/100	1%	3000V@1/1000 300V@1/100
N1070A*	DC-50MHz	20M Ω //1pF	1:1000/100	1%	7000V@1/1000 700V@1/100
N1070APro*	DC-50MHz	20M Ω //1pF	1:1000/100	1%	7000V@1/1000 700V@1/100
N1070B*	DC-100MHz	20M Ω //1pF	1:1000/100	1%	7000V@1/1000 700V@1/100
N1100A*	DC-100MHz	20M Ω //1pF	1:1000/100	1%	10KV@1/1000 1KV@1/100
N1140A*	DC-100MHz	20M Ω //1pF	1:1000/100	1%	14KV@1/1000 1.4KV@1/100
N2008A*	DC-200MHz	10M Ω //1.33pF	1:500/50	1%	1000V@1/500 100V@1/50
N2015A*	DC-200MHz	10M Ω //1.33pF	1:500/50	1%	2000V@1/500 200V@1/50
N2040A*	DC-200MHz	10M Ω //1.33pF	1:500/50	1%	4000V@1/500 400V@1/50
N2060A*	DC-200MHz	10M Ω //1.33pF	1:500/50	1%	6000V@1/500 600V@1/50

注：带*的型号有两种供电模式（电池供电/适配器供电）