MT-7029N

Noise-Filtering Network PoE Toner & Probe

Thank you for purchasing and using the Pro'sKit MT-7029N Noise-Filtering Network PoE Toner & Probe. Please read the instruction manual carefully before using this product, and keep it properly for future review.

OVERVIEW

MT-7029N is a new high-frequency filter circuit technology, with the elimination of noise and anti-interference line tracker, Suitable for ordinary network, PoE network, UTP / STP cable search and positioning. The interface on the network can be located through the port flashing function. Diagnosing the straight, short, open, and crossover conditions of the RJ45 network cable, and RJ11 / 12 telephone cable. Use this instrument to check the cable plug crimping and confirm the positive and negative polarity of the telephone line. Accessory alligator clips that can be used to test coaxial cables, general wiring, and telecommunications / network cables. This product is suitable for telecommunications, network communication, monitoring, CATV and other indoor and outdoor wiring construction or maintenance projects.

INTRODUCTION

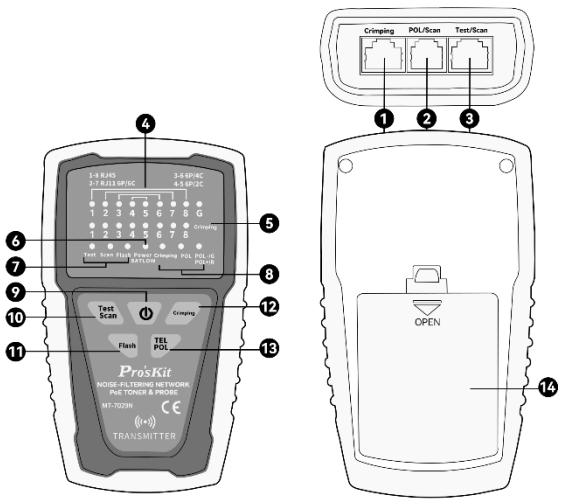


Figure1. MT-7029N Transmitter Diagram

1.「Crimping」: RJ45 plug crimping test socket.
2.「POL/Scan」: Scan & Telephone line test socket.
3.「Test/Scan」RJ45 cable map test & scan socket.
4.「1~8/G」Cable map & Shielded indicator
5.「1~8」 RJ45 plug crimping test indicator
6.「POWER/BAT LOW」 Power ON/OFF & Battery low indicator
7. Function indicator:
 「Test」: Cable map & Shielded function indicator
 「Scan」: Locating and isolating cables function indicator
 「Flash」: Network port flashing function indicator
8. Function indicator
 「Crimping」: RJ45 plug crimping test function indicator
 「POL」: Telephone line + / - pole test function indicator
 「POL－/G，POL＋/R」: Phone line polarity indicator
9. 「⏻」:Power ON/OFF button
10.「Test/Scan」: Cable map test & Scan function button
11.「Flash」: Network port flashing function button
12.「Crimping」:RJ45 Plug crimping test button
13.「TEL/POL」: Phone line polarity function button
14. Battery cover

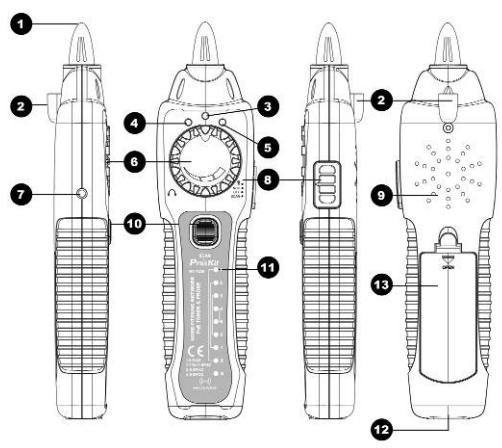


Figure 2. MT-7029N Receiver Diagram

1. Probe：Used for cable tracing and NCV detection.
2. LED light
3. Power ON/OFF indicator
4. NCV indicator
5. Signal status indicator
6. Volume control
7. Earphone socket (Φ3.5mm)
8. Function switch (LED light/NCV/OFF/SCAN mode)
9. Speaker
10.「SCAN」 Locating and tracing cables function button
11.「1~8/G」 Cable map & Shielded indicator
12. RJ45(8 pin)/ RJ11 (6/4/2 pin) cable mapping test socket.
13. Battery cover

SPECIFICATIONS

MT-7029N Transmitter specifications	
Cable tracing	for RJ45 Lan cable Cat5、5e、6、7（UTP/STP），RJ11/12 telephone cable
	Signal Voltage 8Vp-p
	Signal frequency 455KHz
	Tracing distance 600m
Cable map test	RJ45 Test/Scan socket for RJ45 locating Individual wire pairs RJ11 POL/Scan socket for RJ11 locating Individual wire pairs
	8+1 LED indicators
	Test distance max：300m
Crimping Test	Crimping socket for RJ45、RJ11/RJ12 crystal plug
	8 LED indicators
Port Flash	1 LED indicator
Telephone line POL +/-	1 dual color LED: POL-（Green）/ POL+（Red）
Auto power off	1 hour
Low battery indication	About 7.0V; Power LED flashing.
Voltage protection	DC 60V
Battery	9V (NEDA 1604/6F22) x1pcs
working current	Tracing/Cable map/Crimping <35mA; Port flash <110mA
Dimension	（LxWxD）138x80x35mm
weight	142g
MT-7029N Receiver Specifications	
Response frequency	455KHz
Tracing indication	1 LED indicator & speaker, anti-noise and sensitivity adjustable
Compatible connectors	RJ45 socket
Cable map	8+1 LED indicators
NCV	1 LED indicator & speaker (AC 90-1000V)
Earphone	Φ3.5mm socket
Lighting	1 LED
Low battery indication	About 7.0V
Battery	9V (NEDA 1604/6F22) x1pcs
working current	Tracing <200mA; lighting<50mA
Dimension	（LxWxD） 203x50x32mm
weight	95g
Accessories	RJ45 cable patch cords x1、RJ11 cable patch cords x1、RJ45 to alligator clips patch cord x1、RJ11 to alligator clips patch cord x1, earphone x1, storage bag, user manual

OPERATION

MT-7029N Transmitter:

⚠Do not connect with DC 60V live circuit equipment or it will result damage.

▲ Cable map test：

This function is to check whether the network cable jumper connection is normal. Network cable connection to the transmitter and receiver, by viewing the transmitter and receiver 1-8 / G indicator light lit to judge the network cable connection situation, can test the network cable straight, short, open, crossover and other faults. You can also use the transmitter to directly connect to the network switch or the computer network card to test whether the RJ45 jumper connection is on or broken. The specific operation is as follows:

1. Insert the pending network cable into the transmitter「Test/Scan」socket and the other end into the receiver socket.
2. Press the " ⏻ " button, the power indicator is on.
3. Press the 「Test / Scan」 button , the "Test" indicator will illuminate, the line order / fault test starts, and the line order indicates of the LED to start the scanning display.
4. Interpreting the results:
   - **Straight**: The LED of the transmitter and receiver will flash one by one. The "G" indicates shield connection or no connection.
     T: 1-2-3-4-5-6-7-8 T: 1-2-3-4-5-6-7-8-G
     R:1-2-3-4-5-6-7-8 R:1-2-3-4-5-6-7-8-G
   - **Crossover:** If pin2&5 is cross, when LED2 of the transmitter lights. LED5 of the receiver light at the same.
     T: 1-②-3-4-5-6-7-8 T: 1-2-3-4-⑤-6-7-8
     R:1-2-3-4-⑤-6-7-8 R:1-②-3-4-5-6-7-8
   - **Open:** If pin 2 is open, the LED2 of the transmitter and the receiver will not light;
     T: 1-X-3-4-5-6-7-8
     R:1-X-3-4-5-6-7-8
   - **Short:** If pin 4&5 is short, the transmitter 1~8/G LED light up in order, The 4&5 led in 1-8 / G LED on the receiver are lit simultaneously, but are dark.
     T: 1-2-3-④-5-6-7-8 T: 1-2-3-4-⑤-6-7-8
     R:1-2-3-④-⑤-6-7-8 R:1-2-3-④-⑤-6-7-8

   The telecom cable map
   6P6C: LED 2~7 must light up and the other LED are off.
   6P4C: LED 3~6 must light up and the other LED are off.
   6P2C: LED 4~5 must light up and the other LED are off.
   For telecom cable status indication: crossover、open or short, Fault display mode is the same as RJ45 network cable.

▲ Cables tracking：

This function is used to transmit signals to the network cable through the transmission signal from the audio transmitter, the receiver receives the audio signal transmitted by the network cable to find the target network cable, and can simultaneously check the network cable connection or disconnection. This product has the characteristics of signal anti-interference, clear audio sound. Specific operations are as follows:

1. Connect one end of the target line to be found to the transmitter 「Test / Scan」/RJ45 or 「POL / Scan」/RJ11 socket.
2. Press the transmitter power button to turn on, the "Power / BAT LOW" light is on, then press the "Test / Scan" button twice, the "Scan" function light is on, the transmitter begins to transmit the signal.
3. With the transmitter transmits signals, the line order indicator led (1-8) will be scanned at the same time and lit in order to easily determine the connection situation of the network cable. If the indicator led in the 1-8 indicator lamp is not on, it indicates that the line is open.
4. The receiver function switch is switched on to the "Scan" or "lighting" position, and the receiver will "tick", and the receiver power indicator lights on.
5. The receiver sensitivity adjustment knob rotates clockwise to the maximum, and then hold down the receiver SCAN button, the receiver probe close to the network cable, when the receiver sounded, indicating that the receiver probe touched the network cable is the target line to be found.
6. When tracing, you must hold the receiver"SCAN"button, release the button to enter the standby state, and cannot receive the signal. After work, please turn off in time to save the battery.
7. Maybe several cables near the network interface are ringing same time (different by network switch) when tracing, this is because the transmitter transmits audio signal to the internal circuit of the switch at the same time. you can rotate the receiver sensitivity knob counter clockwise, reduce the reception sensitivity to achieve to find the target cable.

▲ Plug crimping checking

This function can check whether the network plug quality, just plug in the transmitter "Crimping" test socket can judge plug pass or fail.

1. Insert the pending network cable into the transmitter「Crimping」socket.
2. Press the " ⏻ " button then press the「Crimping」 button , the " Crimping " indicator will illuminate.
3. Insert the network cable plug into the transmitter「Crimping」socket, the crimping "1-8" indicator will illuminated at the same time, if the indicator light is not on, the plug pin corresponding to the indicator is not connected to the network wire core. refer figure below, the 2 and 5 lights are not on, indicating that the PLUG second and fifth pins are not connected to the network cable.

   1-X-3-4-X-6-7-8

▲ Port Flash

This function transmits the pulsing signal through the transmitter to flashing the LED indicator of the network switch, then can locate the interface of the network cable on the switch.

1. Insert the pending network cable into the transmitter「Test/Scan」socket.
2. Press the " ⏻ " button, then press the「Flash」 button , the " Flash " indicator will illuminate or flashing.
3. Check the indicators of the interface on the network switch, If the indicator light flashing every about 3 seconds, the corresponding network interface is the interface you want to find.

▲ Telephone line POL +/-

This function is suitable for testing and determining the positive and negative poles of a telephone line.

1. Insert the alligator clip patch RJ11 into transmitter " POL / Scan" socket.
2. Press the " ⏻ " button, then press the「POL TEL」button , the " POL " indicator will illuminate.
3. Put the red and black alligator clip to the core of the telephone line, and the POL-/G POL+/R indicator light is lit.
4. When the indicator light is bright red, the red alligator is caught on the positive pole of the telephone line, the black alligator is the negative pole; when the indicator light is bright green, the red alligator is caught on the negative and the black alligator is positive.

▲ Non-contact Voltage detection (NCV)

This function is used to determine whether the wire or equipment has an AC voltage, the detection range AC90-1000V (50 / 60Hz).

- Push the receiver function switch to the NCV position, put the receiver probe close to the target body, if the AC voltage is detected, the speaker emits an alarm sound of different frequency, the speaker rapid sound indicates a high voltage or fire line, the slow sound may be low voltage or zero line.

Note:

- This function is for reference, the voltage may still remain even there is no detection showed up. There are many possible factors might block the detection.
- There are external sources (like flashlight and motor) may trigger non-contact voltage detection.

Pro'sKit®

MT-7029N-C 抗干扰型音频网络 PoE 查线器

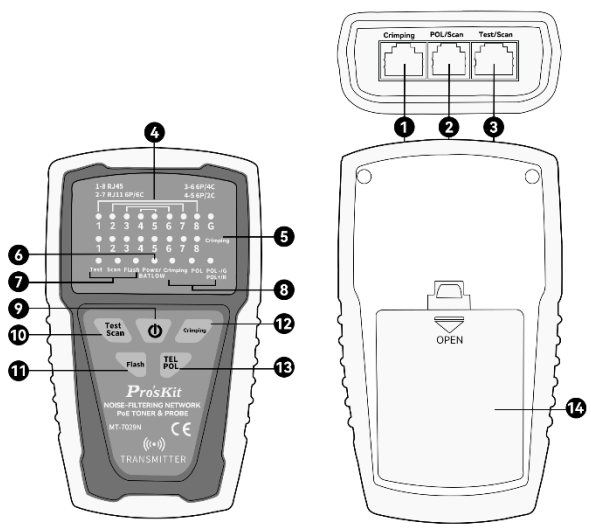
使用说明书

感谢您购买和使用 Pro'sKit MT-7029N-C 抗干扰型音频网络 PoE 查线器，使用本产品前请仔细阅读说明书，阅读后请妥善保存，以备日后查阅。

一、 特点概述：

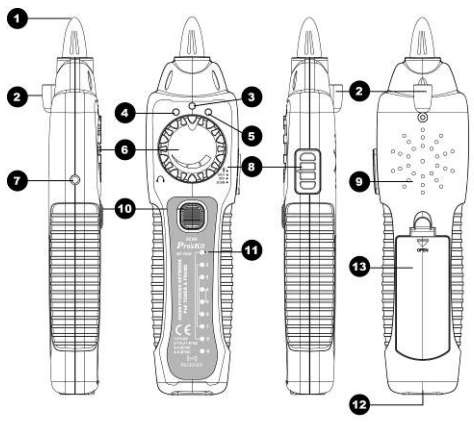
MT-7029N是一款采用最新高频滤波电路技术，具有排除噪音抗干扰寻线的多功能寻线器，适用于普通交换机& PoE交换机，UTP/STP线缆的查找与定位；可以通过端口闪烁功能定位网线在交换机上的接口；诊断RJ45网络跳线(UTP/STP、Cat 5、Cat 6、Cat 7)、RJ11/12电话线(2/4/6 pin)的通路、短路、断路、交叉等状况；可以检查网线水晶头压接是否正常；确认电话线的正负极性等功能。配件鳄鱼夹，可应用于测试同轴电缆线、一般电线和电信/网络接线。适用于电信、网络通讯、监控、有线电视等室内、外布线施工或维护等工程使用。

二、 MT-7029N-C外观及部件名称



MT-7029N-C音频发射器 外观图

1.「Crimping」:网络水晶头压接测试插座
2.「POL/Scan」:RJ11电话线+/-极性、寻线测试插座
3.「Test/Scan」: RJ45/RJ11对线、寻线测试插座
4. 「1~8/G」 : 线序指示灯
5. 「1~8」 : 水晶头压接测试指示灯
6.「POWER」:电源开关/低电压指示灯
7. 功能指示灯: "TEST" 线序测试功能指示灯;
"SCAN" 寻线功能指示灯.
"FLASH"网络端口闪烁功能指示灯.
8. 功能指示灯: "Crimping" 水晶头压接测试指示灯.
"POL" 电话线+/-极测试功能指示灯
"POL+/-" 电话线测试极性指示灯;
9. 「⏻」:电源开/关键
10.「TEST/SCAN」:线序测试、寻线功能键
11.「Flash」:端口闪烁功能键
12.「Crimping」:水晶头压接测试功能键:
13.「TEL/POL」:电话线+/-极测试功能键
14. 电池盖



MT-7029N-C 接收器 外观图

1.音频信号接收探头
2. LED照明灯
3.电源指示灯
4.非接触验电(NCV)指示灯
5.接收信号强弱指示灯
6.灵敏度调节旋钮
7. ø3.5mm耳机座
8.四段功能开关
9.喇叭
10.「SCAN」寻线功能按键
11.「1~8/G」测试结果指示灯
12. RJ45/RJ11网络跳线测试插座
13.电池盖。

三、 产品规格：

MT-7029N-C 音频发射器	
寻线功能	RJ45 插座：适用网线 Cat5、5e、6、7（非屏蔽/屏蔽），RJ11/12 电话线
	输出信号电压 8Vp-p
	输出信号频率 455KHz
	最长寻线距离 600m
网络跳线线序测试	RJ45 插座：适用网线 Cat5、5e、6、7（非屏蔽/屏蔽），RJ11/12 电话线
	结果显示：8+1 LED
	最长测试距离：300m
网络水晶头压接测试	RJ45 插座：适用于 RJ45、RJ11/RJ12 水晶头
	结果显示：8 LED
端口闪烁	1 LED 闪烁
电话线正负极测试	1 LED(红绿双色): POL-（Green）/ POL+（Red）
自动关机	1 小时
低电压指示	约 7.0V 电源指示灯闪烁
输入保护	DC 60V
适用电池	9V (NEDA 1604/6F22) x1pcs
工作电流	线序测试/寻线/水晶头压接测试 <35mA; 端口闪烁测试 <110mA
产品尺寸	（LxWxD） 138x80x35mm
产品重量	142g
MT-7029N 音频接收器	
接收频率	455KHz
寻线结果	1 LED 信号指示灯；扬声器响
线序测试插座	RJ45 插座
线序测试显示	8+1 LED
非接触测电	AC 90-1000V 50/60Hz 1 LED 指示 & 扬声器
耳机插座	Φ3.5mm 插座
辅助照明	1 LED
低电压指示	约 7.0V 电源指示灯闪烁
使用电池	9V (NEDA 1604/6F22) x1pcs
工作电流	寻线 <200mA; 辅助照明<50mA
尺寸	（LxWxD）203x50x32mm
重量	95g
配件	RJ45 跳线 x1、RJ11 跳线 x1、RJ45 转红黑鳄鱼夹跳线 x1、RJ11 转红黑鳄鱼夹跳线 x1, 耳机 x1,收纳包, 说明书

四、 操作说明

⚠ 任何超过DC 60V的活电的线路，不可接入本仪器任何测试插座，以免造成仪器损坏。

(一) 网络跳线 线序测试

此功能是检查网线跳线连接是否正常，网线连接音频发射器和音频接收器，通过查看音频发射器和接收器1-8/G指示灯点亮情况来判断网络跳线连接情况，可测试出网络跳线常见的通路、短路、断路、交叉等故障。也可用音频发射器直接连接网络交换机或电脑网卡测试RJ45跳线连接通、断情况，具体操作如下：

1. 将待测网络跳线插入发射器「Test/Scan」插座，另一端插入接收器插座。
2. 按 ⏻ 电源开/关键开机，「POWER/BAT LOW」指示灯亮，再按一次「Test/Scan」键，「TEST」指示灯点亮，线序/故障测试开始，线序指示LED开始扫描显示：

▲.**直通** UTP/STP 网路跳线 1~8/G PIN 全部连接，主机和测试远端 1~8/G 指示灯按先后顺序依次同步点亮,G 为屏蔽层指示。如下图

T: 1-2-3-4-5-6-7-8 T: 1-2-3-4-5-6-7-8-G
R:1-2-3-4-5-6-7-8 R:1-2-3-4-5-6-7-8-G

▲.**交叉** UTP/STP网路跳线1~8/G PIN有错位连接，主机1~8/G指示灯按先后顺序依次点亮，测试远端1~8/G指示灯按实际错位顺序依次点亮。如下图

T: 1-②-3-4-5-6-7-8 T: 1-2-3-4-⑤-6-7-8
R:1-2-3-4-⑤-6-7-8 R:1-②-3-4-5-6-7-8

▲.**开路** UTP/STP网路跳线1~8/G PIN連接有断路，主机和测试远端1~8/G指示灯对应断路位置LED灯不亮，其它灯按先后顺序依次同步点亮。如下图

T: 1-X-3-4-5-6-7-8
R:1-X-3-4-5-6-7-8

▲.**短路** UTP/STP网路跳线1~8/G PIN全部連接，主机1~8/G指示灯按先后顺序依次点亮，测试远端1~8/G对应短路位置指示灯同时点亮（稍暗）或不亮（短路≥3线），其它灯按先后顺序依次点亮。如下图

T: 1-2-3-④-5-6-7-8 T: 1-2-3-4-⑤-6-7-8
R:1-2-3-④-⑤-6-7-8 R:1-2-3-④-⑤-6-7-8

▲. **RJ-11/12电话线**：测量6芯电话线LED亮"2-7 "，4芯电话线亮"3-6 "，2芯电话线"4-5"，故障显示方式同RJ45网络跳线。

音频发射器直接连接网络交换机或电脑网卡测试：这种方法仅测试通、断情况，不能判定交叉或短路。

1. RJ45跳线一端连接音频发射器，另外一端连接交换机或电脑网卡；
2. 按POWER键开机，按一次Test/Scan键进行测试，发射器1-8/G指示灯依次点亮，该跳线连接正常，如有指示灯不亮，该线断路。

(二) 网线寻线（查找网线）

此功能是通过音频发射器发射信号传输到网线，接收器接收网线传输的音频信号来实现查找目标网线，并且可同时检查网线连接通断的情况。本产品寻线具有信号抗干扰，音频声音清晰等特点。具体操作如下：

1. 将待查找目标线的一端接入音频发射器「Test/Scan」或「POL/Scan」插座.
2. 音频发射器按 ⏻ 电源开/关键开机，「Power/BAT LOW」指示灯亮起，再按二次 「Test/Scan」键，「Scan」功能指示灯点亮，发射器开始发射信号。
3. 音频发射器在发射信号同时,线序指示灯（1-8）也会同时扫描,按顺序依次点亮，方便同时判定网线连接情况，1-8指示灯中如有指示灯不亮，表示这根线断线。
4. 音频接收器档位开关拨到「Scan」或「照明」档位开机，接收器"嘀"一声，同时接收器电源指示灯点亮；
5. 灵敏度调节旋钮顺时针旋转到最大，再按住接收器SCAN按键，接收器探头贴近网线，当接收器喇叭响起，表示接收器接触到的网线即为所要寻找的目标线。
6. 寻线时，必须按住接收器SCAN按键不松开，松开按键进入待机状态，不能接收信号。工作结束，请及时关机，以节省电池。
7. 因为网络交换机的原因，寻线时，有可能临近几个网络接口的网线都响（不同网络交换机情况不同），这是因为音频发射器发射的音频信号经交换机内部电路同时传输到其它网络接口，此时，可以逆时针旋转音频接收器灵敏度旋钮，降低接收灵敏度来实现查找到目标线。

(三) 网络水晶头压接测试

此功能可检查网络水晶头压接是否有断线情况，不需要连接接收器或远端测试，只需插在音频发射器「Crimping」测试插座即可测试。操作方法如下：

1. 音频发射器按 ⏻ 电源开/关键开机，「Power/BAT LOW」指示灯亮起，再按「Crimping」键，「Crimping」功能指示灯点亮。
2. 将压接后的网络水晶头插入「Crimping」测试插座。
3. 「Crimping」"1-8"指示灯同时点亮：如有指示灯不亮，表明该指示灯对应的水晶头针与网线线芯没有连接。

(四) 端口闪烁

此功能可通过音频发射器发射闪烁信号，使网络交换机对应网络端口的LED指示灯闪烁来定位网线在交换机上的接口。操作方法如下：

1. 将待查找目标线的一端接入音频发射器「Test/Scan」插座,另一端已经在交换机上.
2. 音频发射器按 ⏻ 电源开/关键开机，「Power/BAT LOW」指示灯亮起，再按「Flash」键，「Flash」功能指示灯点亮或闪烁，每隔约3秒闪烁一次。
3. 查看网络交换机上端口指示灯，如有指示灯每隔约3秒闪烁一次，该指示灯对应的接口即是要查找的网线端口。

(五) 电话线正负极测试

此功适用于测试并判定电话线的正负极，也可以适用于判定低于60V直流电路正负极的判定。操作方法如下：

1. 将本产品配件中鳄鱼夹跳线RJ11一端插入音频发射器「POL/Scan」插座.
2. 音频发射器按 ⏻ 电源开/关键开机，「Power/BAT LOW」指示灯亮起，再按「POL」键，「POL」功能指示灯点亮.
3. 将红、黑鳄鱼夹分别夹在电话线两线的线芯，此时 POL-/G POL+/R 指示灯点亮。
4. 当指示灯亮红色，表示红色鳄鱼夹在电话线的正极，黑鳄鱼夹负极；当指示灯亮绿色，表示红、黑鳄鱼夹分别夹电话线负极和正极。
5. 测试直流电路正负极方法同上。

(六) NCV非接触电压检测

此功能用于判定电线或设备是否带交流电压,探测范围AC90-1000V（50/60Hz）。操作方法如下：

- 将接收器开关拨NCV档位，将接收器探头贴近目标体，如果探测到交流电压，蜂鸣器发出不同频率的报警声，蜂鸣器急促鸣叫说明电压高或火线，鸣叫缓慢可能电压低或零线。

⚠注意：

- ❖ 即使没有指示，电压仍然可能存在。不要依靠非接触电压探测来判断导线是否存在电压。探测操作可能会受到插座设计、绝缘厚度及类型不同等因素的影响。
- ❖ 外部环境的干扰源（如闪光灯,马达等），可能会误触发非接触电压探测。

此说明书为基本操作的简单说明，完整版请扫描二维码或宝工网站下载: www.prokits.com.tw

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