RIGOL

用户手册 User's Guide

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RP1018H 高压探头

RP1018H High Voltage Probe

Feb. 2025

目录 Contents

1. 规格

型号	**RP1018H**
衰减比例	1000:1
输入阻抗	200MΩ
输入电容	1.5 PF
最大输入：DC+AC peak	18kV CAT II
最大输入：AC RMS.	12kV CAT II
脉冲电压	< 12kVp-p
最大负载电流	90uA
频宽	DC~100MHz
上升时间	3.5 ns
信噪比	> 60dB at 1kHz ; > 50dB at 1MHz
直流信号误差值	≤ 3% 全部范围档
交流信号误差值	≤ 3% 在 1 kHz
温度系数	≤ 200 PPM / ℃
匹配电容调整范围	10PF ~ 35PF
安规检验	符合 EN 61010-031 CAT II 规范
测试线长度	2M ± 0.2M
操作温度范围	-10 ~ 55℃
湿度	85% RH 或更低(at 35℃)
存储温度	-20 ~ 70℃
颜色：握把/本体	黑/黄色
重量/体积	460g / 80(宽) x 80(高) X 320(长) mm

注意

RP1018H 探头一分钟内可测最大直流 18kV。长时间连续测试时，直流需<9kV，可达一小时。

2. 安全须知

感谢您购买 RP1018H 高压探头。高压探头是为防止测试人员在做高压测量工作时受到

意外电击而设计的一种产品。在使用高压探头前，操作者必须先阅读安全规则并且充分理解后才可使用高压探头。

此外，只有接受过高压测试培训、有过高压测试经验或能辨别高压危险情况的测试人员才能使用高压探头。在使用高压探头时，受过安全警示知识培训的测试人员可以防止在操作过程中出现意外伤害。

请不要一个人在超过人体安全范围的电压下工作。

为了自身的安全，每次使用高压探头前，要认真检查所使用的高压探头表面磨损和高压探头测试端破损情况，如有磨损、破损问题出现，千万不要使用此探头。

双手、鞋、地板和工作台一定要保持干燥，并避免在潮湿、发霉或者其他影响安全测量的环境下进行测量工作。在连接或者拆下探头以前，需要把高压电源关闭。

高压探头要保持干净，污垢等沾染物能在探头表面提供传导途径，一定要使用无安全隐患的探头。该探头只能在室内使用。

3. 操作说明

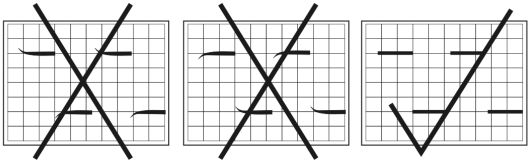
1) 连接探头衰减端的地线（鳄鱼夹）到好的接地点或可靠的接地测试端。
2) 连接 BNC 连接头到示波器的 BNC 输入端口。
3) 选择示波器要求的量程范围。

注意

请务必在连接测试前把高压电源关闭。

4. 匹配电容调整

连接探头至示波器，输入 200Hz 方波至探头测试端，然后调整示波器控制项进而显示一些波形，并针对方波波型上升型态调整位于 BNC 接头的可变电容器。



正确调整 200 Hz 方波的示意图

更换示波器时请依指示调整 Hole 1.即可。

警告：

1) 200 Hz 方波请使用函数信号发生器，输出 20Vp-p。
2) 非专业人员请勿调整 Hole 2，Hole 3 调整点。
3) 本产品出厂时已经对 Hole 2，Hole 3 调整过，请安心操作使用。
4) 调整时请使用本公司附带的指定调棒。
5) 当待测高压的频率超过 40 MHz 时，为了取得更好的频率响应与更佳的接地，请将长地线更换为鳄鱼夹。

当测量 40MHz 以上的高频电压时，请改用此鳄鱼夹直接接地，可以获得更佳的频率响应。

5. 注意事项

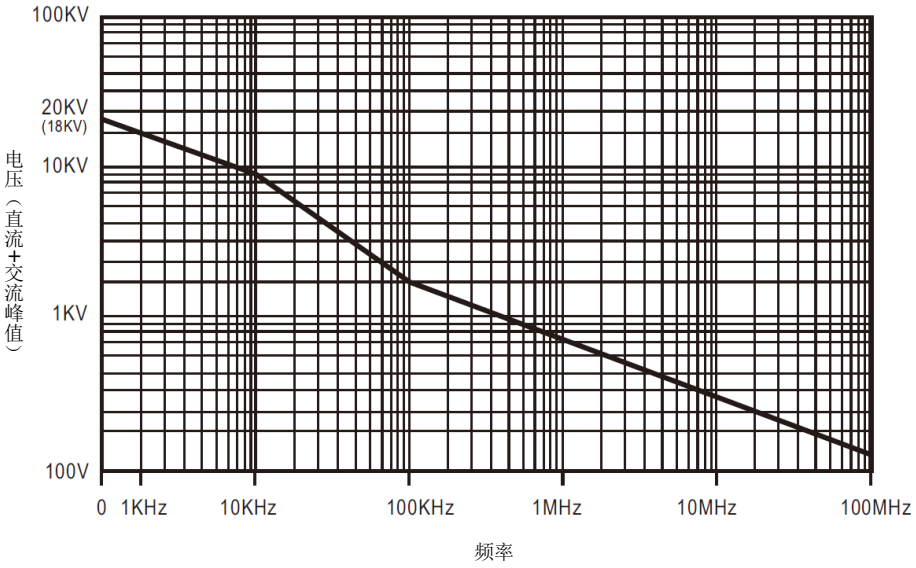
1) 请勿将测试设备的接地线从地面接线柱上移开。
   接地连接是探头安全操作的一个关键点。当高压测量的时候，如果没有这种连接将可能导致人身伤害或者对连接的示波器、探头产生损害。在探头测试端测试连接高压前，一定要先连接好地线，并且地线连接不能轻易挪开，直到高压测试端远离高压源。
2) 绝对不能把接地线与高压电源连接或者把探头测试端接地。
3) 打开高压源前，要保证身体的任何部位都没有和测试设备接触。
4) 测量电压时，请牢记被测电压是实际读数的 1000 倍。
5) 在移走接地夹前，一定要把探头高压测试端从高压源上断开。

6. 清洁

只需清洗探头外部和电缆即可，用软棉布轻轻蘸点酒精和水清洗。不可以把探头的任何部分浸泡在液体里。
在做电压测量以前要使探头全部干燥。
不要把探头放进有腐蚀性溶液或者有腐蚀性烟气里，因为这样将可能引起探头和电缆的破损。

7. 电压测试临界曲线

RP1018H (18KV:60Hz /9KV:10KHz /2KV:100KHz /150V:100MHz)



8. 附件

测试影像管用附件

调整棒

携带箱

联系我们

如您在使用此产品或本手册的过程中有任何问题或需求，请与 **RIGOL** 联系：
电子邮箱：service@rigol.com
网址：www.rigol.com

1. Specification

Model	RP1018H
Division Ratio	1000:1
Input Resistance	200MΩ
Input Capacitor	1.5 PF
Max. Input: DC+AC peak	18kV CAT II
Max. Input: AC RMS.	12kV CAT II
Pulse Voltage	12kVp-p
Max. Loading Current	90uA
Bandwidth	DC~100MHz
Rise Time	3.5 ns
Signal / Noise	> 60dB at 1kHz ; > 50dB at 1MHz
DCV Accuracy	≤ 3% Full Range
ACV Accuracy	≤ 3% at 1 kHz
Temp. Coefficient	≤ 200 PPM / ℃
Compensation Range	10PF ~ 35PF
Safety	Meets EN61010-031 CAT II
Cable Length	2M ± 0.2M
Operation Temperature Range	-10 ~ 55℃
Humidity	85% RH or less (at 35℃)
Storage Temperature Range	-20 ~ 70℃
Color: Handel/Body	Black / Yellow
Weight / Volume	460g /80(W) x 80(H) X 320(L) mm

NOTE

The RP1018H probe can measure up to 18 kV DC in a minute. For prolonged tests, you can test the DC continuously for an hour when DC is less than 9 kV.

2. Safety Precautions

Thank you for purchasing RP1018H high voltage probe. High voltage probe can prevent high voltage testers from subjecting to unexpected shocks when doing high voltage measurement work. Before using the high voltage probe, the operator must read and fully understand the safety rules.
In addition, this high voltage probe only for the person who are trained, experienced, or otherwise qualified to recognize hazardous situations and who trained in the safety precautions that necessary to avoid possible injury when using such a device.
Do not work alone when working with high voltage circuits.
For your own safety, inspect the probes for cracks and frayed or broken leads before each use. If defects are noted, DO NOT USE the probe.
Hands, shoes, floor and work bench must be dry. Avoid making measurements under humid, damp or other environmental conditions that might affect the safety of the measurement situation. If possible, always turn the high voltage source off before connection or disconnection the probe.
The probe body should be kept clean and free of any conductive contamination. The probe is for indoor use only.

3. Operation

1) Connect the divider probe common lead (alligator clip) to a good earth ground or reliable ground.
2) Connect the BNC connector to the BNC input of your oscilloscope.
3) Select the desired range of your oscilloscope.

NOTE
Please turn the high voltage source off before making any connections.

4. Compensation Adjustment

Connect the probe to the oscilloscope, and input a 200Hz square wave to the probe tip. After that adjust the oscilloscope controls to display a few cycles of the waveform. Adjust the trimmer located in the BNC plug for a flat topped square wave.

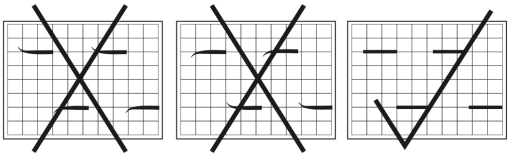
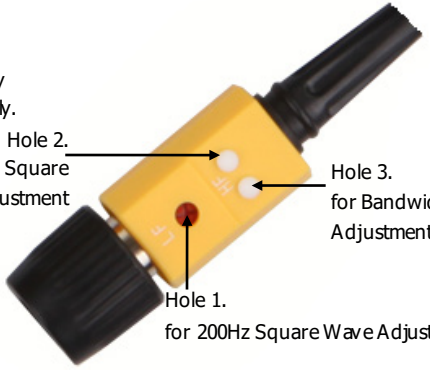


Illustration of 200Hz square wave adjustment

Adjust the frequency response of the probe to match your oscilloscope by the adjust bar attached only.



CAUTION

1) Please use function signal generator to output 20 Vp-p, 200 Hz square waveform.
2) Non-professionals do not adjust the Hole 2 and Hole 3.
3) This product is already adjusting Hole 2 and Hole 3. Please feel free to operation.
4) Use the adjust bar attached only.
5) When the measuring frequency was 40MHz up, you must replace the long earth lead with the Alligator Clip (BP-276N-D) to obtain a best earth and the best frequency response.

For 40MHz up
Measuring Frequency

5. Warning

1) Do not attempt to take the ground of test equipment away from the ground terminal.
The ground connection is critical to the safety operation of the probe. Failure to make this connection may result in personal injury or damage to the probe or oscilloscope. You must be sure to connect the ground before the probe tip comes into contacting with the high voltage. And the ground connection must not be removed until the probe tip has been taken away from the high voltage source.

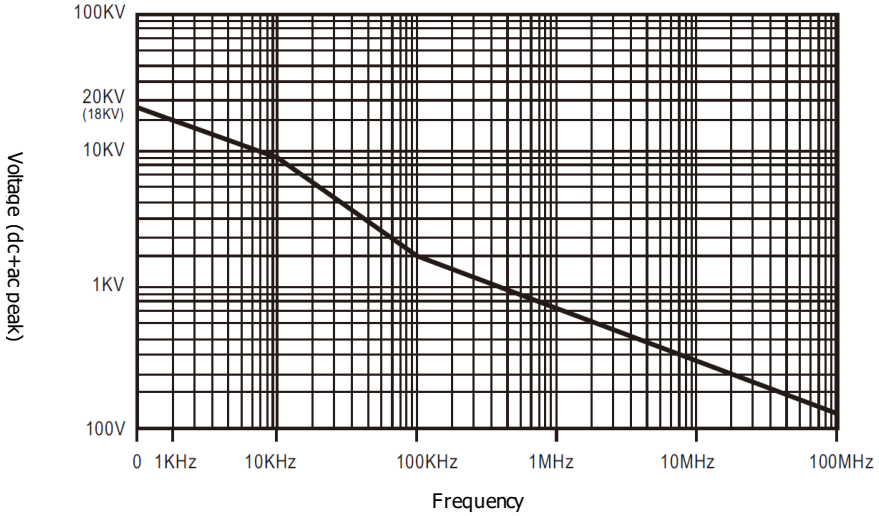
2) Do not connect the ground clip to the high voltage source or the probe tip to the ground for any reason.
3) Before turning the high voltage on, make sure that no part of your body is in contact with the device.
4) Remembering that the voltage being measured is 1000 times greater than the voltmeter reading.
5) Disconnect the probe tip from the high voltage source before removing the ground clip.

6. Cleaning

Clean only the exterior probe body and cables. Use a soft cotton cloth lightly moistened with alcohol and water. Do not allow any portion of the probe to submerge in the liquid. Dry the probe thoroughly before measuring voltage.
Do not place the probe into the corrosive solvents or fumes as these will cause deterioration to the probe and cables.

7. Voltage Derating Curve

RP1018H (18KV:60Hz /9KV:10KHz /2KV:100KHz /150V:100MHz)



8. Accessories

Test CRT for H.V.

Adjust bar

Carrying Box

Contact Us

If you have any problem or requirement when using our products or this manual, please contact **RIGOL**.

E-mail: service@rigol.com

Websites: www.rigol.com