

物理实验教学中心

Physics Experiment Center



Wheatstone Bridge

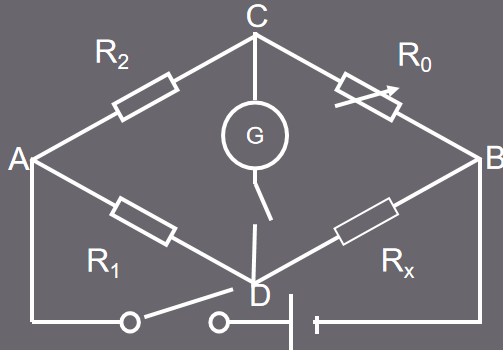
Li Bin

NJUPT

I. Purposes

1. The structure and measurement principles of Wheatstone Bridge.
2. Build the circuit and handle the method of measuring resistance.

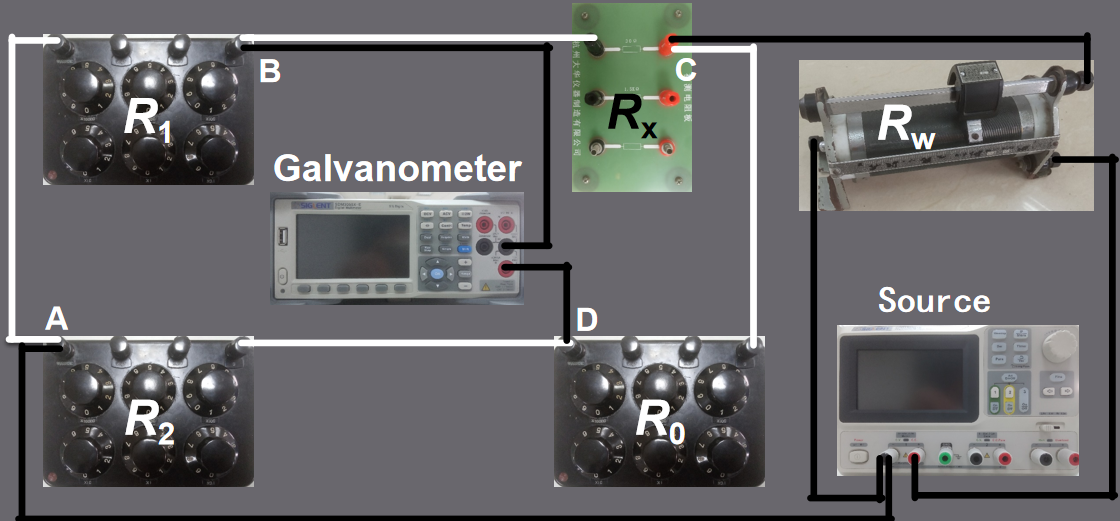
II. Principles

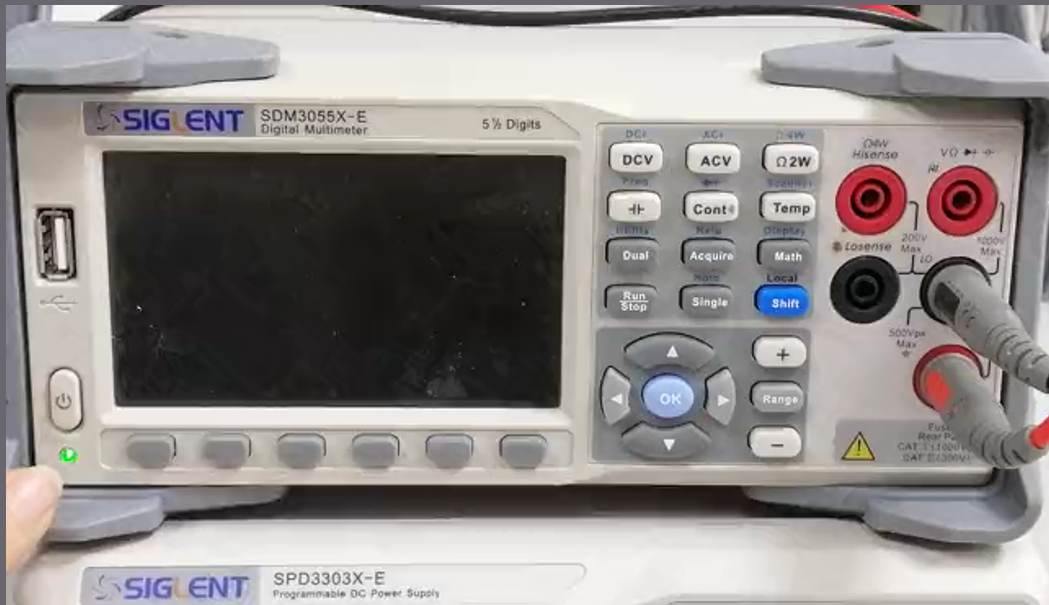


If $I_G = 0$,
$$R_x = \frac{R_1}{R_2} R_0$$

Bridge sensitivity: $S = \Delta n / (\Delta R_0 / R_0)$

Circuit







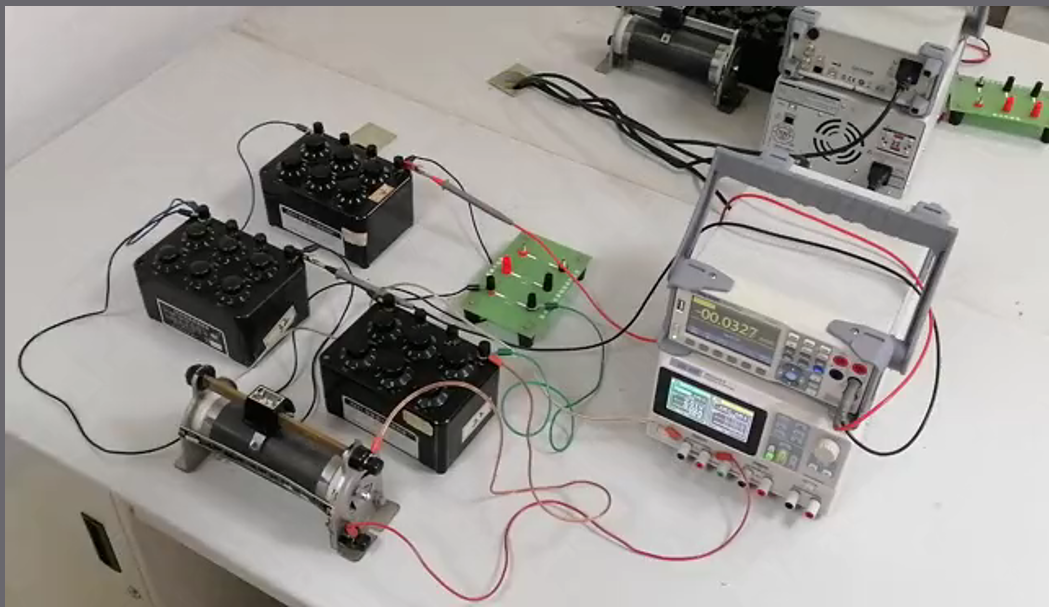


Table I

$\begin{array}{c} \diagdown \\ R \end{array}$	R_1/Ω	R_2/Ω	R_0/Ω	R_{x1}/Ω
1	100.0	1000.0		
2	100.0	2000.0		

Table II

$\begin{array}{c} \diagdown \\ R \end{array}$	R_1/Ω	R_2/Ω	R_0/Ω	R_{x2}/Ω
1	1000.0	1000.0		
2	1000.0	2000.0		

Here is the weblink to download this slide:

<https://github.com/bliseu/phylab/blob/master/Wheatstone%20Bridge.pdf>

Some useful links:

[Wheatstone Bridge Circuit and Theory of Operation \(electronics-tutorials.ws\)](#)

[Wheatstone Bridge - MagLab \(nationalmaglab.org\)](#)

1. Please calculate and finish the tables in the slide.
2. Write a 300-word essay to describe the “Wheatstone bridge”.

The DEADLINE is May 16, 2024.

END