Connect the resistors in parallel

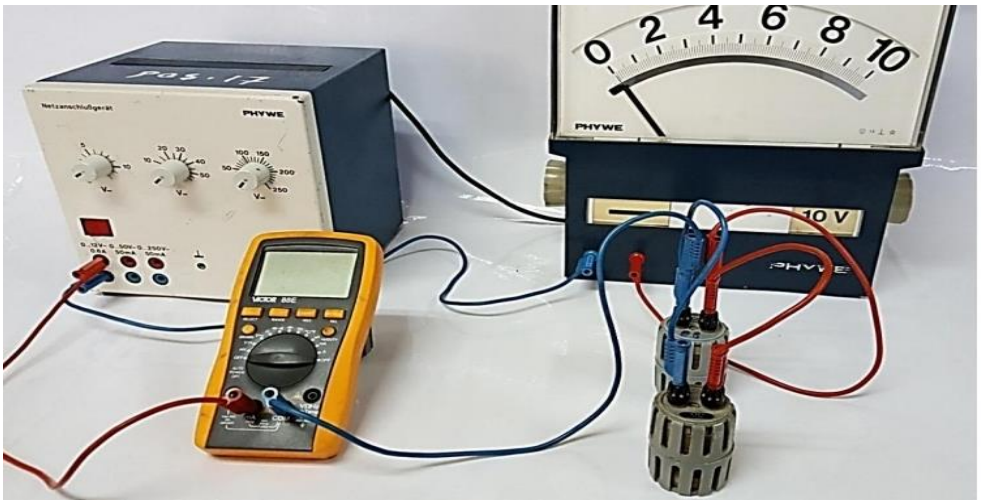
the purpose of the experiment:-

1. The realization of Ohm's law.
2. Studying the relationship between voltage and current in an electrical circuit.

Experience Tools :

1- D.C power supply. 2- D.C voltmeter.

3- D.C Ammeter. 4- Connecting wires.



the theory :

Although Ohm's Law is considered one of the most important laws in electrical sciences, it cannot be used to analyze complex circuits. Therefore, the scientist Kirchhoff developed his laws that enable us to use Ohm's law to solve complex circuits. In parallel conduction, we find that the current has more than one path through which it passes.

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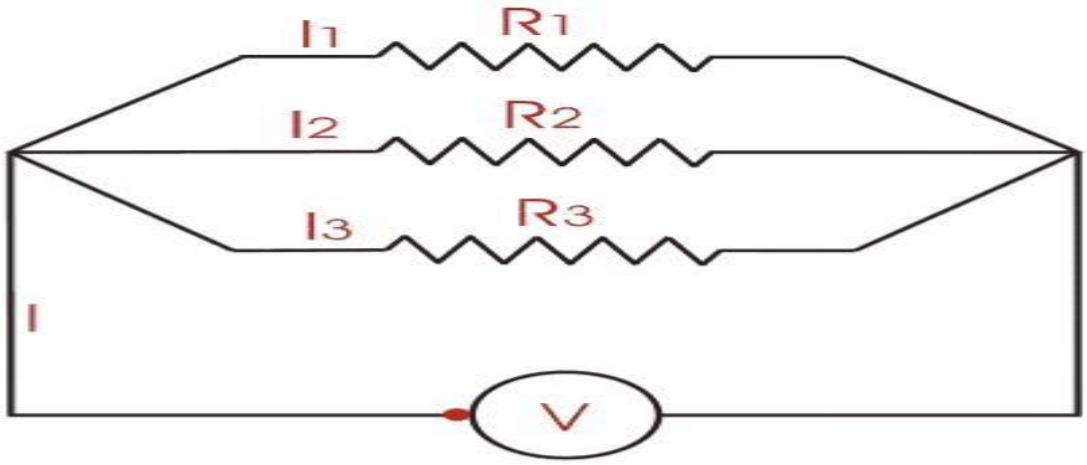
As for the potential difference, it is constant on all resistors, meaning that the potential difference between the two ends of the first resistance is equal to the potential difference between the two ends of the second resistance and equal to the potential difference between the two ends of the third resistance.

Vtotal =V1=V2=V3

We note that all resistors are connected in parallel with the voltage source. This means that the potential difference between the two ends of any resistance is exactly equal to the source voltage of the source.

There is a special law for calculating the total value of a group of resistors connected in parallel if all the resistors are equal, as in the circuit shown below, we find that there are three resistors connected in parallel .



Laws and Accounts:

$I_{total} = I_1+I_2+I_3$

Vtotal= 10

Vtotal= V1=V2=V3 =10 volt

R (k Ω)	V(volt)	I(A)	R(Ω)
1	10	9.9	
560	10	17.6	
330	10	30.6	

R= V/I

I_1=V1/R

I_2=V2/R2

I_3=V3/R3

1/Req=1/R1+ 1/R2+1/R3

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