

Experiment to find the resistance of ohmic resistors in parallel

Apparatus

Comboplate.

2 springs

2 **identical** resistors of about 20 ohms

2 connecting leads with bare ends

3 leads with crocodile clips

1 9V battery with battery holder and

leads 1 variable resistor

1 digital voltmeter and 1 digital ammeter

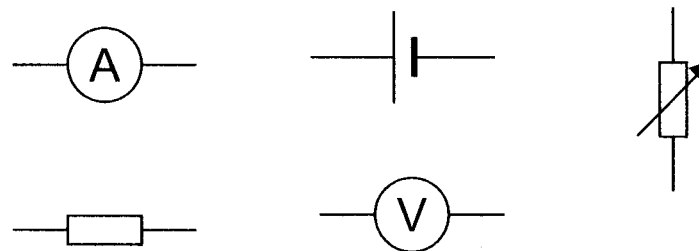
Procedure

1. Place the 2 springs in wells A1 and D1.
2. Using two of the leads with crocodile clips, connect the voltmeter across the resistors.
3. Now connect the ammeter, battery and variable resistor in series with the resistors as shown in the diagram.
4. Using the variable resistor vary the current passing through the resistors.
5. For each reading on the ammeter, record the reading on the voltmeter at the same time.

6. Make up a table of results and record the value of the current at different values of the voltage.

Results and Conclusions

1. Using the symbols below draw a diagram of the circuit used in this experiment.



2. Plot a graph of current (vertical axis) against voltage (horizontal axis).
3. Draw a line of best-fit through the points.
4. Calculate the gradient of the graph. The gradient is **1 divided by** the combined resistance of the resistors in parallel.
5. Using your text-book and the coding on the resistors find the combined resistance of resistors when they are placed in parallel. This is the theoretical value for their combined resistance.
6. Does the value for the resistance from the graph match the theoretical value to the experimental?

