

ALTERNATING CURRENT

Current is defined as increment of electrons. The unit for measuring current was named in honor of A.M. Ampere, the French physicist. Thus it is called ampere. The symbol for current is I. The electric current is a quantity of electrons flowing in a circuit per second of time. The electrons move along the circuit because the e. m. f. drives them. The current is directly proportional to the e. m. f.

A stream of electrons in a circuit will develop a magnetic field around the conductor along which the electrons are moving. The strength of the magnetic field depends upon the current strength along the conductor. The direction of the field is dependant upon the direction of the current.

If the force causing the electron flow is indirect, the current is called direct (d. c.). If the force changes its direction periodically the current is called alternative (a. c.).

Alternating current is the current that changes direction periodically. The electrons leave one terminal of the power supply, flow out along the conductor, stop, and then flow back toward the same terminal. A voltage that caused current reverses its polarity periodically. This is properly called an alternating voltage. The power supply that provides the alternating voltage actually reverses the polarity of its terminals according to a fixed periodic pattern. A given terminal will be negative for a specific period of time and drive electrons out through the circuit. Then, the same terminal becomes positive and attracts electrons back from the circuit. This voltage source cannot be a battery. It must consist of some types of rotating machinery.

II. Guess the meaning of the following international words:

1) physicist, 2) ampere, 3) symbol, 4) second, 5) polarity, 6) period, 7) battery.

III. Translate into Russian the words and expression from the text:

1) increment of electrons; 2) measuring; 3) to drive; 4) directly proportional; 5) conductor; 6) strength; 7) causing force; 8) terminal; 9) to flow; 10) to reverse.

IV. Give the English equivalents for the words below:

1) Змінний струм, 2) за секунду, 3) кількість електронів, 4) потік електронів, 5) магнітне поле, 6) напрямлення, 7) залежати, 8) посилення, 9) джерело напруги, 10) ротаційний механізм.

V. Complete the sentences using the text:

1. The electric current is ...
2. The unit for measuring current is ...
3. A stream of electrons in a circuit will develop ...
4. The current is called direct if ...
5. The current is called alternating if...
6. Alternating voltage is ...
7. Alternating voltage source cannot be ...

VI. Answer the questions:

1. Why do electrons move along the circuit?
2. What does the strength of the magnetic field depend upon?
3. What does the direction of the field depend upon?
4. What is the way of alternating current electrons?
5. How does the alternating voltage power supply reverse the polarity of terminals?

VI. Talk on the properties of the electric current and its types