

tyco

Electronics

Energy Division

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CLASSIFICATION OF ELECTRICITY

Although electricity is sometimes classified as to its method of generation, it is more commonly put into either two categories dependent upon the behavior of the electrons in motion, or the current.

DIRECT CURRENT

If one part of the circuit is always positive with respect to another part, and the flow of electrons is always toward the positive part of the circuit, it is said to be a DIRECT CURRENT (D-C) circuit. The current flow need not necessarily be constant, but it must go in the same direction at all times. There are several types of direct current and all depend upon the magnitude of the current in relation to time. **A constant current shows no variations in magnitude over a period of time.**

ALTERNATING CURRENT

There are circuits in which the polarity of one point with respect to another point changes continuously, or alternates. This causes the electrons to shuttle back and forth, first going in one direction, then in the other. Such a circuit is called an ALTERNATING CURRENT (A-C) circuit. The simplest form of alternating circuit is a sine wave where the current starts at zero value, builds up to a maximum in one direction, comes back down to zero, builds up to a maximum in the opposite direction and comes back to zero. **Alternating currents are identified by their frequency, the basic unit for which is the number of cycles per second.** In other words one complete cycle (360 deg.) is repeated 60 times in one second. The most commonly encountered frequencies in this country are 50 and 60 cycles, which are used for ordinary house wiring and most industrial applications.