

**ACROSS**

3. Unit of charge.
5. = coulomb per second
7. Any complete path along which charge can flow.
8. For most conductors, as thickness (or gauge) increases, their resistance _____.
9. The ampere is the unit of _____.
10. _____ current; current that repeatedly reverses direction, usually at 60 cycles per second.
14. _____-pere... one jolly roger per second
15. For most conductors, as temperature increases, their resistance _____.
20. Unit of energy used by power companies.
22. Long-distance transmission lines always operate at very _____ voltages to minimize current and thus, thermal energy loss ($I^2 R$ loss)
23. Conventional current; motion of _____ electrical current.
25. Rate at which energy is transformed; unit is watts; 1 watt = 1 joule per second
26. Flow of electric charge measured in amperes
28. Device to measure potential difference across a resistor. Always connected in parallel.
29. Always associate the words voltage across with a _____ connection.

DOWN

1. EP or voltage; usually referred to as EP difference. (2 words)
2. Device that converts chemical to electrical energy; consists of two dissimilar conductors and an electrolyte.
4. Resistance of a resistor is constant, independent of voltage across it; $R = V/I$; if V increases, then I increases. (2 words)
6. A light bulb transforms electric energy into _____ and light
8. _____ current; flow of charge always in one direction.
11. = Power x Time; measured in joules or kWh.
12. Unit of power.
13. Ammeter has very low resistance and must be connected in _____ in a circuit; only one current path.
16. Device designed to have a specific resistance. Used in electronics to control the flow of charge.
17. _____ current; motion of positive electrical current.
18. Unit of energy.
19. Unit of resistance; 1 volt per ampere
21. Device to measure electric current; always connected in series in a circuit since its resistance is very low.
24. The property that determines how much current will flow: $= V/I$; measured in ohms
27. Always associate the words current through with a _____ connection.