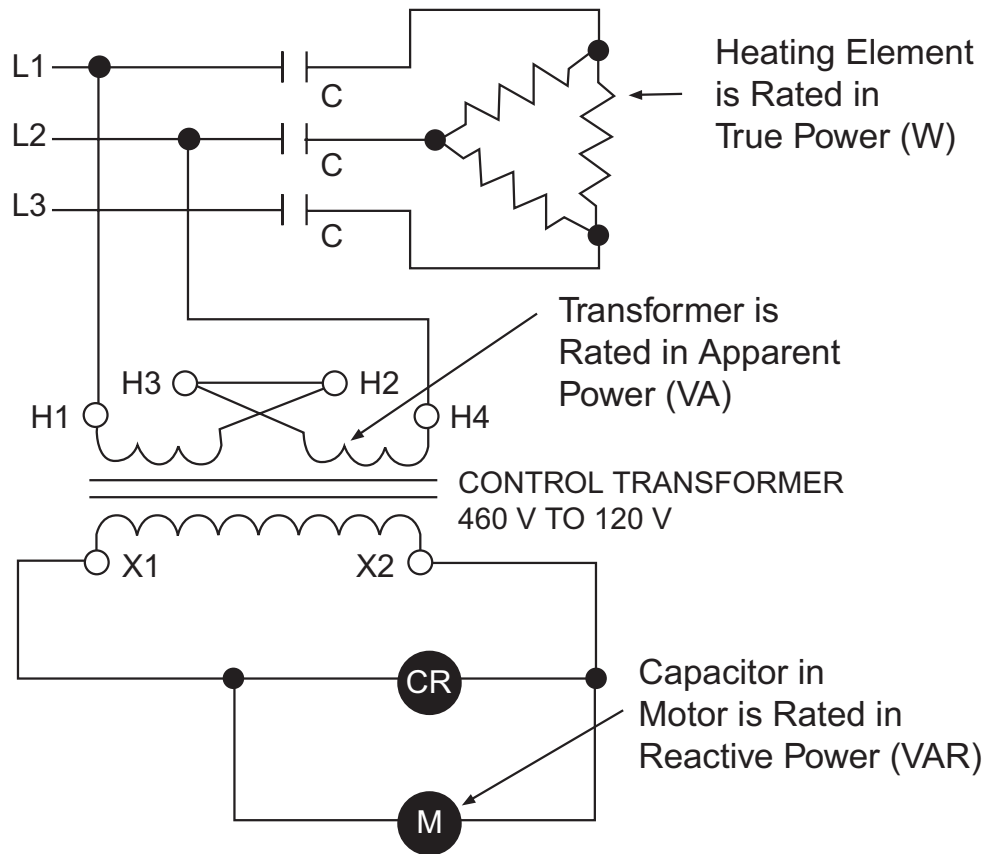


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### TYPES OF POWER



Reactive power is supplied to a reactive load (capacitor/coil) and is measured in volt-amperes reactive (VAR). The capacitor on a motor uses reactive power to keep the capacitor charged. The capacitor uses no true power because it performs no actual work such as producing heat or motion.

In an AC circuit containing only resistance, the power in the circuit is true power. However, almost all AC circuits include capacitive reactance (capacitors) and/or inductive reactance (coils). Inductive reactance is the most common because all motors, transformers, solenoids and coils have inductive reactance.

Apparent power represents a load or circuit that includes both true power and reactive power and is expressed in volt-amperes (VA), kilovolt-amperes (kVA) or megavolt-amperes (MVA). Apparent power is a measure of component or system capacity because apparent power considers circuit current regardless of how it is used. For this reason, transformers are sized in volt-amperes rather than in watts.

## Notes

**Maintenance Electrician  
Practice Exam #1**

1. The National Electrical Code® (NEC®) is NOT:
  - a. designed for future expansion of electrical use.
  - b. designed to safeguard people and property from electrical hazards.
  - c. published by the NFPA®.
  - d. intended as a specification manual for trained persons.
  
2. The NEC® mandates specific branch-circuits, receptacle outlets, and utilization equipment to be provided with a ground-fault circuit interrupter (GFCI); this device is intended \_\_\_\_\_.
  - a. to prevent overloading the conductors
  - b. to prevent overloading the circuit breakers
  - c. for the protection of equipment from overloads
  - d. for the protection of personnel
  
3. Electrical wiring installed \_\_\_\_\_ is considered to be installed in a damp location.
  - a. under canopies or roofed open porches
  - b. underground
  - c. outside
  - d. none of these apply
  
4. When a 20-ampere, 120-volt receptacle outlet is installed, in which of the following listed locations is the receptacle required to have GFCI protection?
  - a. in a classroom of an educational facility
  - b. in the lobby of a movie theater
  - c. under an outdoor canopy, near the entrance of a public library
  - d. in the walkway of an indoor retail shopping mall

13. In general, liquidtight flexible metal conduit (LFMC) shall be securely fastened within \_\_\_\_\_ of each box or other conduit termination.
- 4½ feet
  - 3 feet
  - 12 inches
  - 18 inches
14. When a pull box contains conductors of size 4 AWG and larger and a straight pull of the conductors is to be made, the length of the box shall NOT be less than \_\_\_\_\_ times the trade diameter of the largest conduit entering the box.
- six
  - four
  - eight
  - twelve
15. In general, all of the following wiring methods listed are permitted to be used as a feeder for temporary wiring on a construction site EXCEPT \_\_\_\_\_.
- NM cable
  - NMC cable
  - type PD cord
  - type SJO cord
16. Determine the MAXIMUM number of size 14 AWG THHN conductors permitted to be installed in a trade size  $\frac{3}{8}$  inch flexible metal conduit (FMC) that contains a bare size 14 AWG grounding conductor when the flex has external fittings.
- two
  - three
  - four
  - five

**Notes**

**ANSWER****REFERENCE**

15. c Trade Knowledge  
Current Formula  
 $100 \times 6 = 600$  watts total  
 $I = P/E \quad I = 600 \text{ watts}/120 \text{ volts} = 5$  amperes
16. a Tbl. 300.5, Note 5
17. c 314.29
18. c 314.24(B)
19. b 312.2
20. a 210.52(H)
21. a 210.52(C)(1)
22. b Tbl. 300.5, Col. 4
23. c 334.15(C)
24. d 310.12(C)  
200.6(A)-(E)  
250.119
25. b 404.2(A)