Electrical Level 3

Load Calculations – Branch and Feeder Circuits 26301-14

Objectives

When trainees have completed this lesson, they should be able to do the following:

1. Calculate loads for single-phase and three-phase branch circuits.
2. Size branch circuit overcurrent protection devices (circuit breakers and fuses) for noncontinuous duty and continuous duty circuits.
3. Apply derating factors to size branch circuits.
4. Calculate ampacity for single-phase and three-phase loads.
5. Use load calculations to determine branch circuit conductor sizes.
6. Use ***NEC Table 220.55*** to calculate residential cooking equipment loads.
7. Select branch circuit conductors and overcurrent protection devices for electric heat, air conditioning equipment, motors, and welders.

This is a knowledge-based module; there are no Performance Tasks.

Next Session…

Lighting Loads; Receptacle Loads; Multi-Outlet Assemblies

Next Session…

Think About It – Multi-Outlet Assemblies

This assembly is 5' in length and will be used in an other-than-residential application in which appliances are *not* likely to be used simultaneously. According to ***NEC Section 220.14(H)(1)***, what is the load for this device?

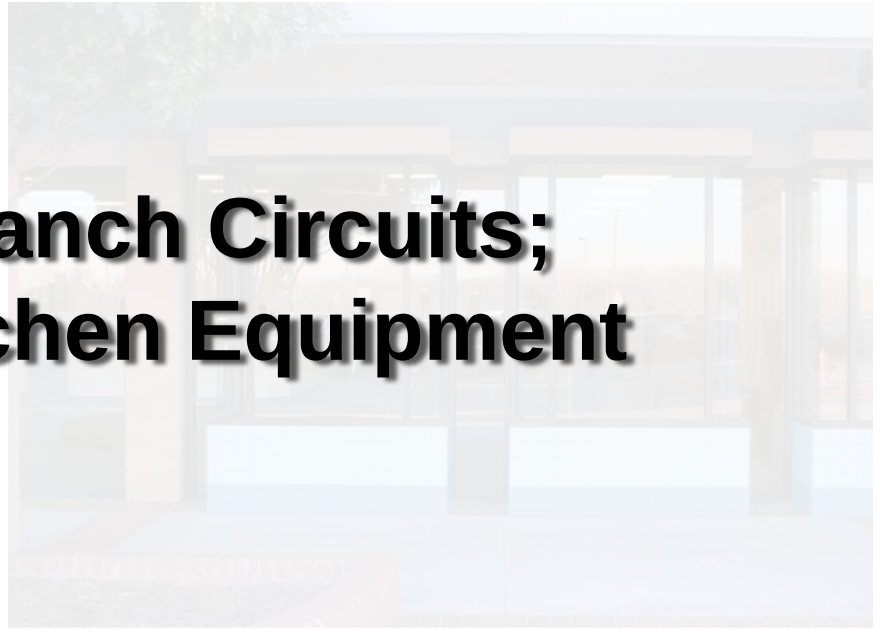
26301-14_SA01.EPS

Show Window Loads; Sign Loads

Next Session…

Think About It – Show Window Load Calculations

These individual show windows are each 5' in length. According to the requirements given in ***NEC Section 220.14(G)(2)***, what is the branch circuit load for each window?



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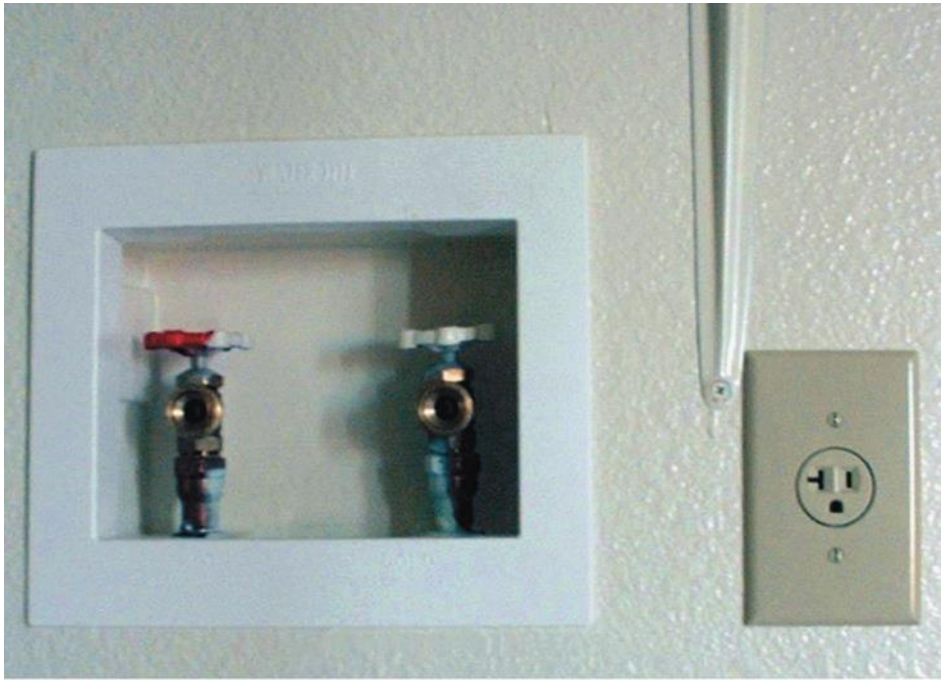
Residential Branch Circuits; Commercial Kitchen Equipment

Think About It – Laundry Room Circuit

Does the *NEC*® specifically require a dedicated branch circuit for a washing machine?



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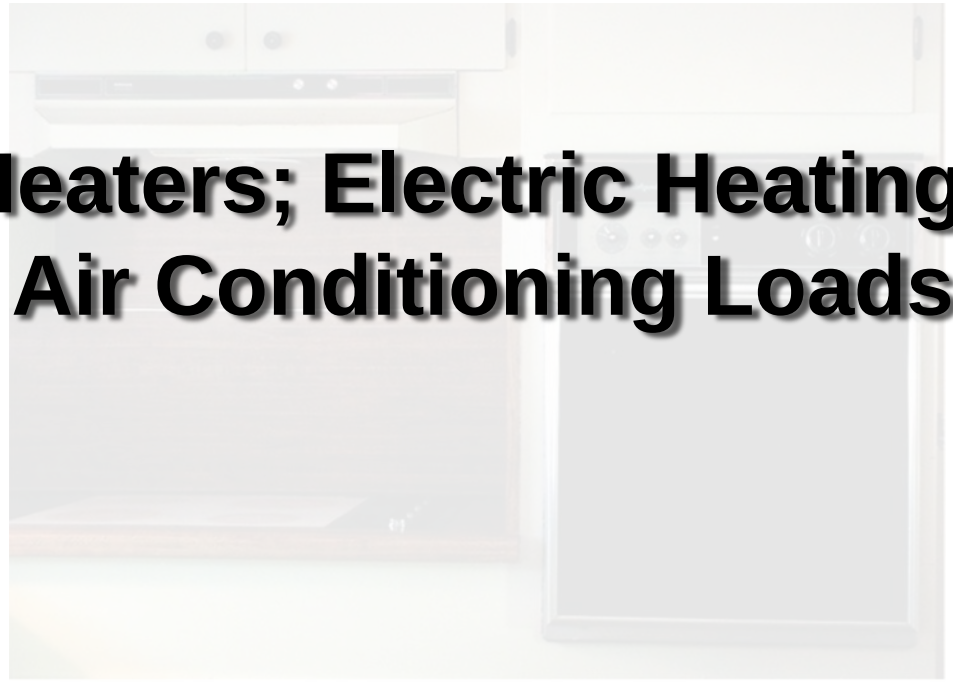
7.0.0 – 8.0.0

Next Session…

Which note under ***NEC Table 220.55*** refers to this installation?



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Water Heaters; Electric Heating Loads; Air Conditioning Loads

Next Session…

Motor Loads; Welders

26301-14_SA07.EPS

Next Session…

Wrap Up

Wrap Up

3-2-1

3 – Write 3 important things learned during class

2 – Write 2 questions you have about the material

1 – Write 1 thought you had about the material

Next Session…

MODULE EXAM

Review the complete module to prepare for the module exam. Complete the Module Review as a study aid.