ARTICLE 220

BRANCH-CIRCUIT, FEEDER, AND SERVICE LOAD CALCULATIONS

Introduction to Article 220—Branch-Circuit, Feeder, and Service Load Calculations

This article contains the requirements necessary for calculating demand loads for branch circuits, feeders, and services. The *Code* recognizes that not all demand for power will occur at the same time. This load diversity allows us to apply the rules contained in this article to reduce the required size of circuits and equipment. Some of these rules are outside of the scope of this material, however we do cover the following topics in this article:

- ▶ Scope
- ▶ Branch-Circuit Load Calculations
- ▶ Noncoincident Loads
- ▶ Neutral Load Calculations
- ▶ Special Application Load Calculations

As you work through Article 220, be sure to study the illustrations and review the examples in Annex D to help you fully understand this article's requirements.
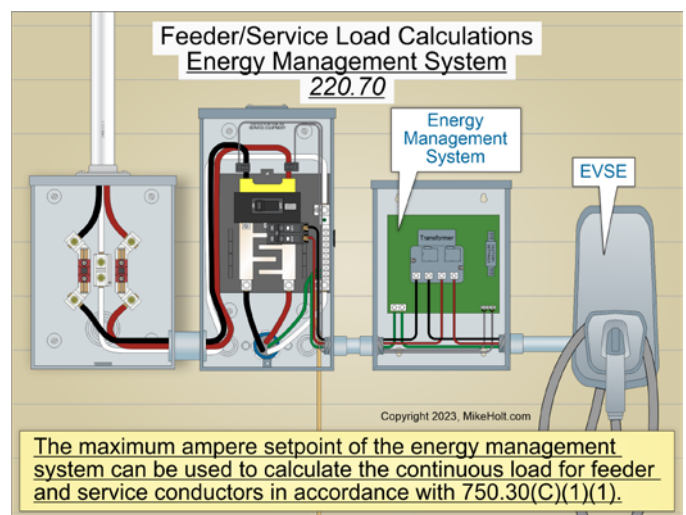
220.70 Energy Management Systems

The ampere setpoint of the energy management system can be used to calculate the maximum continuous load for feeder and service conductors. See 750.30(C)(1)(1). ▶Figure 220–20

According to Article 100, "Energy Management System" is a system consisting of monitor(s), communications equipment, controller(s), timer(s), or other device(s) that monitors and/or controls an electrical load or a power production or storage source.

Author's Comment:

- ▶ An EV energy management device allows us to not include the electric vehicle (EV) charging load when sizing feeders and service conductors. For example, an EV charger with a nameplate current rating of 48A is permitted on a 200A service that has a calculated demand load of 200A.

▶Figure 220–20