

**(B) Other Than Continuous Duty.** For other than continuous duty, these conductors shall have an ampacity, in percent of full-load secondary current, not less than that specified in Table 430.22(E).

**(C) Resistor Separate from Controller.** Where the secondary resistor is separate from the controller, the ampacity of the conductors between controller and resistor shall not be less than that shown in Table 430.23(C).

**TABLE 430.23(C) Secondary Conductor**

Resistor Duty Classification	Ampacity of Conductor in Percent of Full-Load Secondary Current
Light starting duty	35
Heavy starting duty	45
Extra-heavy starting duty	55
Light intermittent duty	65
Medium intermittent duty	75
Heavy intermittent duty	85
Continuous duty	110

**430.24 Several Motors or a Motor(s) and Other Load(s).** Conductors supplying several motors, or a motor(s) and other load(s), shall have an ampacity not less than the sum of each of the following:

- (1) 125 percent of the full-load current rating of the highest rated motor, as determined by 430.6(A)
- (2) Sum of the full-load current ratings of all the other motors in the group, as determined by 430.6(A)
- (3) 100 percent of the noncontinuous non-motor load
- (4) 125 percent of the continuous non-motor load.

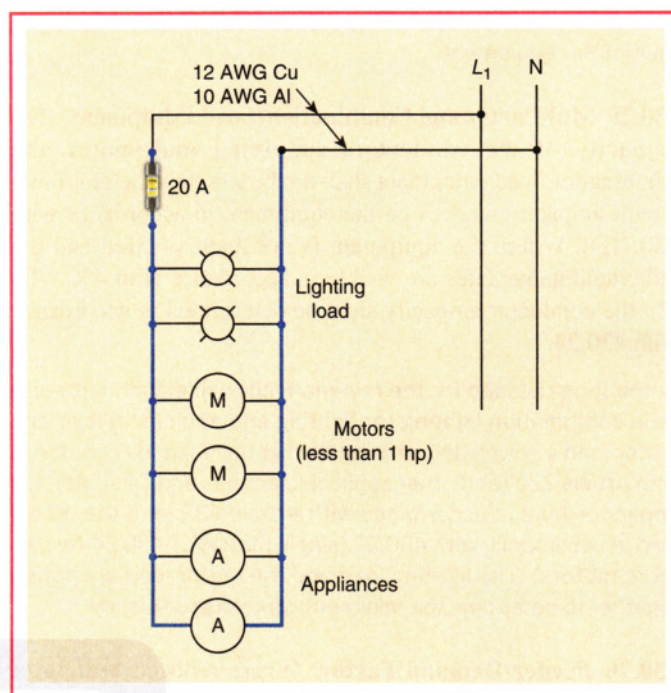
Informational Note: See Informative Annex D, Example No. D8.

**Exception No. 1:** Where one or more of the motors of the group are used for short-time, intermittent, periodic, or varying duty, the ampere rating of such motors to be used in the summation shall be determined in accordance with 430.22(E). For the highest rated motor, the greater of either the ampere rating from 430.22(E) or the largest continuous duty motor full-load current multiplied by 1.25 shall be used in the summation.

**Exception No. 2:** The ampacity of conductors supplying motor-operated fixed electric space-heating equipment shall comply with 424.4(B).

**Exception No. 3:** Where the circuitry is interlocked so as to prevent simultaneous operation of selected motors or other loads, the conductor ampacity shall be permitted to be based on the summation of the currents of the motors and other loads to be operated simultaneously that results in the highest total current.

As illustrated in Exhibit 430.4, the requirements of Article 210 and Article 430 apply where motors are connected to a 15- or



**EXHIBIT 430.4** A 20-ampere branch circuit supplying lighting, small motors, and appliances.

20-ampere branch circuit that also supplies lighting or other appliance loads. Motors rated less than 1 horsepower may be connected to these circuits, and they must be provided with overload protective devices unless the motors are not permanently installed, are started manually, and are within sight of the controller location.

#### See also

**430.32(B)** and **(C)** and **430.53(A)** for additional information on the installation of motors (1 horsepower or less)

Where branch circuits or feeders serve motors and/or other electrical loads, the highest rating or setting of the branch circuit or feeder short-circuit and ground-fault protective devices for the minimum-size branch circuit or feeder conductor permitted by 430.24 is specified in 430.62.

Where two or more motors are started simultaneously, the heaviest load that a feeder will ever be required to carry occurs when the largest motor is started, and all the other motors supplied by the same feeder are running and delivering their full-rated horsepower.

This requirement and those of 430.62 for the short-circuit and ground-fault protection of the branch circuit or feeder are based on the principle that the conductors should be sized to have an ampacity equal to 125 percent of the full-load current of the largest motor plus the full-load currents of all other motors and all other loads supplied by the feeder.

Where the conductors are branch-circuit conductors to multi-motor equipment, 430.53 specifies the maximum rating of the branch-circuit short-circuit and ground-fault protective device, and 430.7(D)(1) requires the maximum ampere rating of the