rated 20 amperes or less and 150 volts or less to ground shall be permitted to be the disconnecting means.

427.56 Controls.

(A) Temperature Control with "Off" Position. Temperature-controlled switching devices that indicate an "off" position and that interrupt line current shall open all ungrounded conductors when the control device is in this "off" position. These devices shall not be permitted to serve as the disconnecting means unless capable of being locked in the open position.

(B) Temperature Control Without "Off" Position. Temperature controlled switching devices that do not have an "off" position shall not be required to open all ungrounded conductors and shall not be permitted to serve as the disconnecting means.

(C) Remote Temperature Controller. Remote controlled temperature-actuated devices shall not be required to meet the requirements of 427.56(A) and (B). These devices shall not be permitted to serve as the disconnecting means.

(D) Combined Switching Devices. Switching devices consisting of combined temperature-actuated devices and manually controlled switches that serve both as the controllers and the disconnecting means shall comply with all the following conditions:

(1) Open all ungrounded conductors when manually placed in the "off" position
(2) Be designed so that the circuit cannot be energized automatically if the device has been manually placed in the "off" position
(3) Be capable of being locked in the open position

427.57 Overcurrent Protection. Heating equipment shall be considered protected against overcurrent where supplied by a branch circuit as specified in 210.20 and 210.24.

ARTICLE
430 Motors, Motor Circuits, and Controllers

Part I. General

Most electrical utilization equipment is rated in volt-ampere (VA) or watt input, but because of how motors are used to drive some form of machinery, motors typically are rated in horsepower output. Circuits supplying motors are sized according to the current input to the motor. In addition to the output of the motor, the input current is affected by the motor losses and the power factor of the motor. The losses are not the type of information found on the nameplate of a motor. The motor tables in Part XIV of Article 430 contain accurate input ampere ratings for motors based on industry standards.

Some motors are available with their output ratings expressed in watts. (One horsepower equals approximately 746 watts.) Circuits that supply motors not rated in horsepower still must be sized according to the input of the motor, rated in amperes. Sizing circuits based solely on kilowatt output results in seriously undersized conductors (because the current requirements of the losses and the power factor are neglected) and in the improper application of overcurrent devices protecting the motor and motor circuit components.

See also

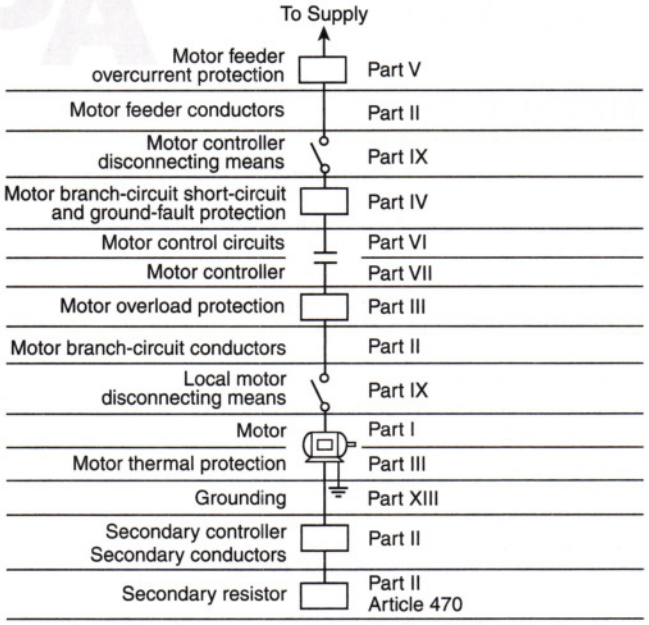
430.6 for ampacity and motor rating determination

Δ **430.1 Scope.** This article covers motors, motor branch-circuit and feeder conductors and their protection, motor overload protection, motor control circuits, motor controllers, and motor control centers.

Informational Note No. 1: See Informational Note Figure 430.1 for the arrangement of this article.

Informational Note No. 2: See 110.26(E) for installation requirements for motor control centers.

General, 430.1 through 430.18	Part I
Motor Circuit Conductors, 430.21 through 430.29	Part II
Motor and Branch-Circuit Overload Protection, 430.31 through 430.44	Part III
Motor Branch-Circuit Short-Circuit and Ground-Fault Protection, 430.51 through 430.58	Part IV
Motor Feeder Short-Circuit and Ground-Fault Protection, 430.61 through 430.63	Part V
Motor Control Circuits, 430.71 through 430.75	Part VI
Motor Controllers, 430.81 through 430.90	Part VII
Motor Control Centers, 430.92 through 430.99	Part VIII
Disconnecting Means, 430.101 through 430.113	Part IX
Adjustable-Speed Drive Systems, 430.120 through 430.131	Part X
Over 1000 Volts, Nominal, 430.201 through 430.208	Part XI
Protection of Live Parts — All Voltages, 430.231 through 430.233	Part XII
Grounding — All Voltages, 430.241 through 430.245	Part XIII
Tables, Tables 430.247 through 430.251(B)	Part XIV



Δ ***INFORMATIONAL NOTE FIGURE 430.1*** *Article 430 Contents.*