

EXHIBIT 430.20 A general-use or an isolating switch serving as the disconnecting means for a stationary motor rated at more than 40 horsepower dc or 100 horsepower ac according to 430.109(E).

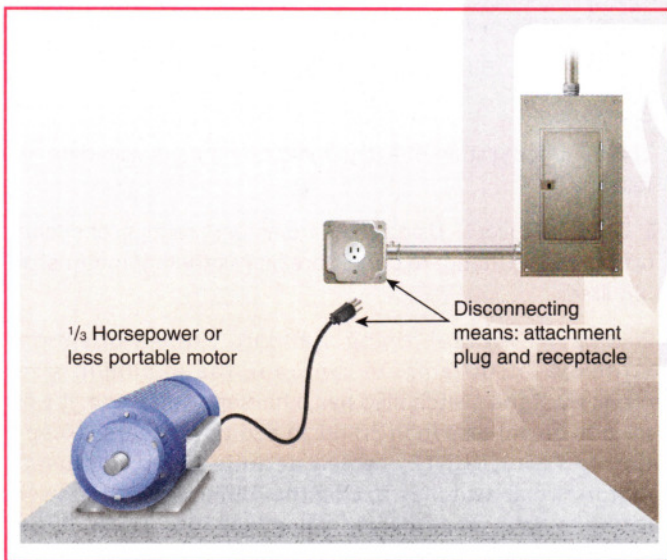


EXHIBIT 430.21 An attachment plug and receptacle serving as the disconnecting means for a certain cord-and-plug-connected motor according to 430.109(F).

load shall be determined in accordance with 430.110(C)(1) through (C)(3).

- Δ **(1) Horsepower Rating.** The rating of the disconnecting means shall be determined from the sum of all currents, including resistance loads, at the full-load condition and also at the locked-rotor condition. The combined full-load current and the combined locked-rotor current so obtained shall be considered as a single motor for the purpose of this requirement.

The full-load current equivalent to the horsepower rating of each motor shall be selected from Table 430.247, Table 430.248,

Table 430.249, or Table 430.250. These full-load currents shall be added to the rating in amperes of other loads to obtain an equivalent full-load current for the combined load.

The locked-rotor current equivalent to the horsepower rating of each motor shall be selected from Table 430.251(A) or Table 430.251(B). The locked-rotor currents shall be added to the rating in amperes of other loads to obtain an equivalent locked-rotor current for the combined load. Where two or more motors or other loads cannot be started simultaneously, the largest sum of locked-rotor currents of a motor or group of motors that can be started simultaneously and the full-load currents of other concurrent loads shall be permitted to be used to determine the equivalent locked-rotor current for the simultaneous combined loads. In cases where different current ratings are obtained when applying these tables, the largest value obtained shall be used.

Exception No. 1: The locked-rotor current equivalent to the horsepower rating of each polyphase motor with design letter A shall be one of following:

- (1) *If available, the motor's marked value of locked-rotor amperes*
- (2) *In the absence of a marked value of locked-rotor amperes for the motor, the value calculated from Equation 430.110(C)(1)a:*

[430.110(C)(1)a]

$$\text{locked-rotor amperes} = \left(\frac{\text{kVA}}{\text{hp}} \right) \times \frac{(1000 \times \text{motor's marked value of rated horsepower})}{(\text{motor's marked value of rated volts}) \times (\sqrt{3})}$$

where:

kVA/hp = maximum range value of kilovolt-amperes per horsepower with locked rotor in Table 430.7(B) associated with the motor's marked locked-rotor indicating code letter

Informational Note: Equation 430.110(C)(1)a is obtained by solving for locked-rotor amperes in the formula for "kilovolt-amperes per horsepower with locked rotor," as follows:

[430.110(C)(1)b]

$$\frac{\text{kVA}}{\text{hp}} = \frac{(\sqrt{3}) \times (\text{motor's marked value of rated volts}) \times (\text{locked-rotor amperes})}{(1000 \times \text{motor's marked value of rated horsepower})}$$

The numerator of Equation 430.110(C)(1)b for kilovolt-amperes per horsepower is the apparent power input to a three-phase motor with locked rotor in units of volt-amperes. The factor of 1000 VA/kVA in the denominator converts this value to units of kilovolt-amperes and "(marked value of rated horsepower)" in the denominator converts this to kilovolt-amperes per horsepower. Note that "motor's marked value of rated volts" is a line-to-line