$$\text{Locked-rotor current} = \frac{\text{locked-rotor kVA}}{\sqrt{3} \times \text{kV}}$$

For 460 V (460 V = 0.46 kV),

$$\frac{125.8}{1.73 \times 0.46} = 158 \text{ A}$$

The maximum locked-rotor current for a 20-hp, 460-V motor with code letter G is 158 A when the system voltage is 460 V.

(C) Torque Motors. Torque motors are rated for operation at standstill and shall be marked in accordance with 430.7(A), except that locked-rotor torque shall replace horsepower.

(D) Multimotor and Combination-Load Equipment.

(1) Factory-Wired. Multimotor and combination-load equipment shall be provided with a visible nameplate marked with the manufacturer's name, the rating in volts, frequency, number of phases, minimum supply circuit conductor ampacity, and the maximum ampere rating of the circuit short-circuit and ground-fault protective device. The conductor ampacity shall be calculated in accordance with 430.24 and counting all of the motors and other loads that will be operated at the same time. The short-circuit and ground-fault protective device rating shall not exceed the value calculated in accordance with 430.53. Multimotor equipment for use on two or more circuits shall be marked with the preceding information for each circuit.

Section 110.3(B) requires listed or labeled equipment to be used and installed in accordance with the manufacturer's instructions accompanying the equipment or marked on the nameplate. The nameplate marking for the maximum ampere rating of the branch-circuit short-circuit and ground-fault protective device may limit the type of protective device to a fuse by stipulating "fuse" without reference to a circuit breaker. A circuit breaker located in a panelboard, switchboard, or similar distribution equipment is permitted to supply the equipment in which the fuses are installed.

(2) Not Factory-Wired. Where the equipment is not factory-wired and the individual nameplates of motors and other loads are visible after assembly of the equipment, the individual nameplates shall be permitted to serve as the required marking.

430.8 Marking on Motor Controllers. A motor controller shall be marked with the manufacturer's name or identification, the voltage, the current or horsepower rating, the short-circuit current rating, and other necessary data to properly indicate the applications for which it is suitable.

Exception No. 1: The short-circuit current rating is not required for motor controllers applied in accordance with 430.81(A) or (B).

Exception No. 2: The short-circuit current rating is not required to be marked on the motor controller when the short-circuit current rating of the motor controller is marked elsewhere on the assembly.

Exception No. 3: The short-circuit current rating is not required to be marked on the motor controller when the assembly into which it is installed has a marked short-circuit current rating.

Exception No. 4: Short-circuit current ratings are not required for motor controllers rated less than 2 hp at 300 V or less and listed exclusively for general-purpose branch circuits.

A motor controller that includes motor overload protection suitable for group motor application shall be marked with the motor overload protection and the maximum branch-circuit short-circuit and ground-fault protection for such applications.

Combination motor controllers that employ adjustable instantaneous trip circuit breakers shall be clearly marked to indicate the ampere settings of the adjustable trip element.

Where a motor controller is built in as an integral part of a motor or of a motor-generator set, individual marking of the motor controller shall not be required if the necessary data are on the nameplate. For motor controllers that are an integral part of equipment approved as a unit, the above marking shall be permitted on the equipment nameplate.

Informational Note: See 110.10 for information on circuit impedance and other characteristics.

430.9 Terminals.

(A) Markings. Terminals of motors and controllers shall be suitably marked or colored where necessary to indicate the proper connections.

(B) Conductors. Motor controllers and terminals of control circuit devices shall be connected with copper conductors unless identified for use with a different conductor.

(C) Torque Requirements. Control circuit devices with screw-type pressure terminals used with 14 AWG or smaller copper conductors shall be torqued to a minimum of 0.8 N·m (7 lb-in.) unless identified for a different torque value.

Proper torque is essential for safe and reliable connections. A screw-type pressure terminal that has not been torqued might loosen during motor operation, resulting in overheating. Safety is enhanced by providing a minimum torque value for screw-type pressure terminals.

See also

110.14(D) and its commentary for more information on torque requirements

430.10 Wiring Space in Enclosures.

(A) General. Enclosures for motor controllers and disconnecting means shall not be used as junction boxes, auxiliary gutters,