

Application Considerations

■ **Motor Selection.** To extend motor life, be sure to use the right motor for the application (see Figure 4 and Table 2). For instance, for an application that requires starting a high-torque load, a standard, general purpose NEMA Design B motor might be inadequate. A Design C motor, which has more starting torque than either a Design A or Design B motor and yet draws about the same starting current, might be required. If a Design A or Design B motor were used on a high-torque application, the overload protectors might trip before the motor could accelerate the load to operating speed. Even if overload protectors permit the motor to reach running speed, motor life would be shortened due to the additional heat generated during the prolonged starting period. *Be careful not to mistake the insulation class letter or kVA code letter for the design letter.*

Energy efficient motors can trip some circuit breakers because they have higher inrush currents than standard motors.

Other features of the motor, besides torque, must be considered to match the driven load. These include rotating speed (rpm), supply power requirements, duty cycle, and the method of starting. The physical environment can introduce other factors, such as corrosives, moisture, temperature extremes, and position (e.g., vertical mounting).

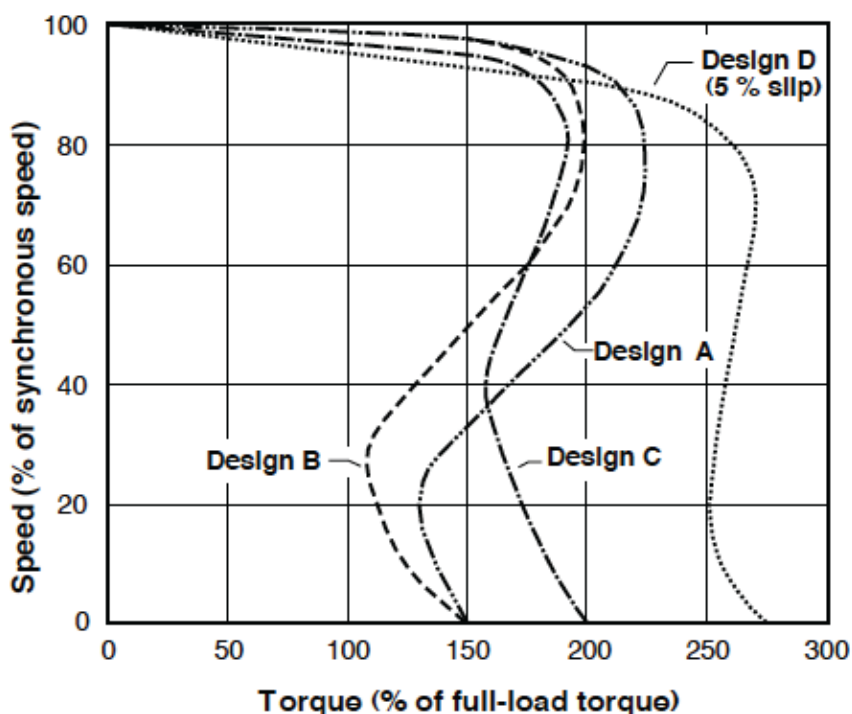


Figure 4. General Speed-Torque Characteristics