MOTORS

Introduction and Scope

This sections covers requirements for most motors 200 HP and less. This section does not apply to fire pumps, elevators and sealed refrigeration motors, nor does it apply to small motors with stepped down voltage below 115V.

Related Sections

U-M Design Guideline Technical Sections:

U-M Master Specification:
15170 - Motors

U-M Standard Details:

General

U-M Master Specification Section 15170 Motors shall be used as the basis for the motor specification on all projects. The A/E shall edit (append) the U-M motor specification to make it project specific; however do not generally modify the fundamental motor attributes described in the specification. Turn on hidden text and read all spec. editor's notes when editing the specification.

Phase and Voltage

Motors 1/2 HP and larger should be three phase.

Single phase motors may be rated for 115V or 200V, depending on the application, and building power.

Three phase motors should be rated for 460V wherever possible. Where building power does not include 480V distribution, review options with the Design Manager and consider adding a step-up transformer, and using 460V motors. The long term objective in most buildings is to have three phase distribution at 480V.

Power distribution systems serving large motors (100HP and larger) should be examined to ensure across the line motor starting will not adversely impact the system. Consult the Design Manager and other appropriate University personnel in these applications.

Three Phase Motor General Requirements

For most applications, including air handlers, motor enclosures for fans and pumps should be Open Drip Proof (ODP) type. For cooling towers and other harsh environments, use Totally Enclosed Fan Cooled (TEFC) motors.

Multiple Speed Motors

With the increased viability of variable speed drives, applications for multiple speed motors are few and far between. Where three phase motors require multiple speeds, there shall be a separate winding for each speed. Coordinate electrical requirements carefully with electrical designer.