

26 29 23 Variable Frequency Motor Controllers

Revision 01/04/2019

Purpose:

The Architect and/or Engineer shall incorporate the Rice specific requirements indicated in this standard's section into their design. The Architect and/or Engineer shall further produce project specifications in line with industry standards that are updated to reflect these Rice specific requirements.

1. **General Requirements**

- a. Variable Frequency Drives (VFDs):
 - i. Approved manufacturers: Exception: when integral to electric motor
 1. ABB
 2. Yaskawa
- b. All VFDs to be installed in air-conditioned space. No VFDs to be mounted outside, on roof, or inside of conditioned equipment. For exterior/roof mounted equipment, VFD to be located in closest interior MEP space. (Disconnects in between VFD and driven motor shall include auxiliary contact wired to initiate VFD shutdown).
- c. Harmonic analysis shall be provided by MEP Engineer and coordinated with Rice Electrical Engineer during design phase.
 - i. Acceptable means of mitigation
 1. DC Chokes, line reactors, harmonic filters, 12 / 18 pulse drives, and matrix drives.
 2. Other means that limit THD at drive terminals to less than 5%
 - ii. Independent harmonic cancellation units are not acceptable.
- d. All VFDs shall be equipped with a bypass starter or redundant drive to allow service of failed drive.
- e. All VFD's shall be provided with factory installed BACnet interface cards. Controls contractor shall be required to provide integration of all points. Rice in its sole discretion may omit some or all such points at its discretion.