

SECTION 23 05 14

VARIABLE FREQUENCY DRIVES

This document is intended to note the Owners Design Requirements (ODR) for the titled specification section. Design professional to review and integrate ODR into the project's technical specifications. This ODR document should not be viewed as a standalone technical specification.

PART 1 - GENERAL REQUIREMENTS

N/A

PART 2 - PRODUCTS AND MATERIALS

♦ MANUFACTURERS:

- Danfoss (VLTF102)

♦ VARIABLE FREQUENCY DRIVES

The VFD shall provide with:

- Motor Overload Protection: Electronic motor protection shall be provided which is capable of predicting motor winding temperature based on inputting specific parameters including motor design type (TEFC, ODP, or other) and speed range. The protection shall provide an orderly shutdown should the motor's thermal capabilities be exceeded.
- Communications
 - The standard protocols shall be BACnet. Each individual drive shall have the protocol in the base VFD. The use of third party gateways and multiplexers is not acceptable. All protocols shall be "certified" by the governing authority. Use of non-certified protocols is not allowed.
 - Manual Bypass Systems: Bypass control circuitry shall be mounted integrally to the VFD enclosure. The bypass shall utilize an input circuit breaker to feed both the VFD and the bypass starter. An input service switch shall be utilized to feed the VFD and isolate the VFD for trouble shooting. An output contactor which is electrically and mechanically interlocked with the bypass starter shall be utilized on the VFD to provide a positive disconnect between the VFD and the motor. Separate Hand/Off/Auto and Inverter/Bypass switches shall be included to allow manual or automatic transfer to across-the-line operation. If the VFD trips on a fault, power will automatically transfer across the line to run the motor at full speed. If the VFD auto restart function has been enabled, the drive will first attempt to restart itself after a fault. If it is unable to do so within the number of times programmed, power will then automatically transfer across the line. The bypass system shall NOT depend on the VFD to be installed for bypass operation. Bypass stand alone operation shall be completely functional in both Hand and Automatic modes even if the VFD has been removed for repair/replacement. Bypass system serial communications shall remain functional with the VFD removed to provide HVAC system temperature control. Serial communications in the bypass system and its' programmable inputs and outputs shall be monitored and controlled via serial communications to provide HVAC system temperature control.

PART 3 - EXECUTION

N/A

END OF SECTION