

Vari-Flow Air Management System Specification

Provide Greenheck Vari-Flow Air Management System as shown on plans and in accordance with the following specification:

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Construction

The Greenheck Vari-Flow Air Management System shall be a listed outlet center which shall consist of a Johnson Controls programmable logic controller inside of a NEMA-1 stainless steel enclosure capable of controlling multiple exhaust, and one supply fan via a variable frequency drive (VFD). The control interface shall be a membrane keypad with a graphic overlay consisting of, but not limited to, a Hood Lights momentary button, Fan On/Off momentary button, and Fan 100% momentary button. The control interface shall also include a system fault indicator light. In the event of a failure of a hood temperature sensor (readings beyond 0-180°F) or a VFD fault signal, a red System Fault lamp on the hood control panel will illuminate and remain lit until the failure is corrected. In fire mode, the control panel shall be capable of providing 100% exhaust and shutdown of make up air regardless of current fan speeds via integration of a fire system microswitch with factory terminals.

Resistive type temperature sensors shall be mounted in the capture tank to monitor exhaust air temperatures. Temperature sensors shall be made of stainless steel and shall be installed in a UL approved coupling. Fluctuation of exhaust temperatures caused by cooking load shall be sensed by the temperature sensor and conveyed to the controller. The controller shall vary the speed of the fans via the variable frequency drives from full speed down to a minimum speed to be determined by building test and balance. The system shall be capable of serving as an IMC 507.2.1.1 compliant auto start-up control to automatically start fans during cooking operations (temperatures above 95°F, adjustable).

Variable frequency drives shall allow modulation of the fans based on the exhaust air temperature sensed by the temperature sensors. Upon pressing the Fan 100% button, exhaust fan VFDs shall go to full speed for 15 minutes (adjustable), or until the Fan 100% override button is depressed again, which shall return the system to full temperature control. Variable drives shall be Yaskawa brand (or equivalent) mounted in the controls enclosure. Drives provide thermal overload protection to fans and eliminate the need for magnetic starters for 3 phase motors.

To ensure proper building pressurization, supply air fans shall respond to changes in static pressure in the space via direct digital controls (DDC) integrated into the make-up air unit controls. This adjustable pressure set point shall be factory set at +.05" WC. In the event of a failure of the space static pressure

sensor (readings beyond $-.25/+ .25$ "WC) or a MUA/SF VFD fault signal, a red failure lamp on the hood control panel will illuminate and remain lit until the failure is corrected. If the space pressure sensor fails, the controller will command the MUA/SF VFD/outside air damper signal to track off of exhaust fan speed.

Due to continuous research, Greenheck reserves the right to change specifications without notice.