Vari-Flow Controls

Provide Accurex Vari-Flow Controls as shown on plans and in accordance with the following specification:

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The Accurex Vari-Flow Control system shall be a UL listed outlet center which shall standardly consist of a NEMA-1 Stainless Steel Enclosure within a Stainless Steel Utility Cabinet, Programmable Logic Controller (PLC), User Interface (keypad with LCD display or touchscreen), temperature sensors and Variable Frequency Drives (VFD's). The PLC shall be capable of controlling multiple exhaust and supply fans via VFD or analog signals.

The user interface shall be either a keypad or touchscreen provided in accordance with the following specifications.

Keypad:
The user interface shall be a membrane keypad with a graphic overlay and LCD display consisting of, but not limited to, a Lights On/Off button, Fan On/Off button, and Fan 100% button. The control interface shall also include a temperature interlock indicator and system fault indicator light.

- In the event of the failure consisting of, but not limited to temperature sensor(s), VFD(s) and fire, the red system fault indicator on the control interface will flash until the failure is corrected.

Or

Touch Screen:
The user interface shall be a touch screen with independent fan and light control, live system monitoring dashboard, trending, fan scheduling, fan and light naming capabilities, and balancing pages for ease of proper kitchen balancing.

- In the event of the failure consisting of, but not limited to temperature sensor(s), VFD(s) and fire, the touch screen will automatically go to a fault page, which will describe the current fault. The fault will remain until the failure is corrected.

System Operation:
The Vari-Flow sequence of operation shall utilize resistive type temperature sensors that are mounted in the capture tank of the hood 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 temperature caused by cooking load shall be sensed by the temperature sensor and conveyed to the controller. The controller shall fully modulate the speed of the fans via the VFD or analog signal, from maximum 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 the fans during cooking operations (temperature set point 95°F, adjustable). VFD(s) or analog signal(s) shall allow modulation of the fans based on the exhaust air temperature sensed by the temperature sensors. It must have a fully modulating turndown of up to 50% of maximum speed. Upon pressing the Fan 100% button, exhaust fan speeds shall go to maximum speed for 10 minutes (adjustable), or until the Fan 100% button is pressed again, which shall return the system to full temperature control. Variable drives shall be Yaskawa brand (or equivalent) mounted in the utility cabinet. Drives provide thermal overload protection to fans and eliminate the need for magnetic starters for 3 phase motors. To ensure proper building pressurization, the supply fans shall respond to changes in the exhaust fans speeds. The speed of the associated supply fan(s) is determined by the weighted average of the exhaust fans.

In a fire condition, the control panel shall be capable of forcing the exhaust to maximum speed, shutdown of supply air, and shutdown of lights regardless of current fan speeds via integration with a fire system.

Vari-Flow Controls are also standardly provided with a remote enable, fire system interface, and shunt trip breaker control.

Optional features may include, but are not limited to:

- Building Management System Interface
  - BACnet IP
  - BACnet MSTP
  - LONworks
  - Modbus
- Space Static Pressure Transducer
- Air Proving
- Gas Reset
- High Temperature Alarm
- Wash Interface

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