EMSplus Specification
Demand Ventilation System

Application:

The **EMS***plus* Demand Ventilation System is designed to automatically reduce exhaust and supply airflow quantities, while ensuring hood performance is maintained. The **EMS***plus* uses Variable Frequency Drives (VFD) and temperature sensors in the exhaust ducts to modulate the fans speed during cooking operation maximize energy savings. The **EMS***plus* touch screen interface provides fan(s) control, system configuration, programming of schedule and diagnostic information.

Construction:

The **EMS***plus* includes:

- Programmable Logic Controller (PLC)
- Touch Screen Interface, NEMA 4 rated
- Duct Temperature Sensors
- Variable Frequency Drives (VFD)
- Room Temperature Sensor

The system includes a touch screen interface for individual fan(s) and hood lights control, independent wash control (if applicable), gas valve reset, programmable schedule, 100% Airflow Override function, preparation time mode and diagnostics including VFD status. All touch screen pages displayed show descriptive icons or plain text explaining the functions or values. The touch screen interface can be installed on the face of the hood, on the face of the utility cabinet, on the face of a wall mounted control enclosure or by itself, either recessed in the wall or surface mounted on the wall. The touch screen interface is NEMA 4 rated in order to withhold grease and water when installed on the face of the hood or utility cabinet.

Control enclosure will be NEMA 1 rated and listed for installation inside of the exhaust hood utility cabinet. Control enclosure may be constructed of stainless steel or painted steel.

The programmable logic controller (PLC) will constantly monitor the exhaust air temperature through the riser mounted temperature sensor and modulate the fan speeds accordingly.

A room temperature sensor will also be provided for field installation in the kitchen space in order to start the fan(s) based on the temperature differential between the room and the exhaust air in the duct, rather than fixed set-points.

A Preparation Time Mode is available for morning operation: dedicated make-up air will be locked out only allowing the use of transfer air during this mode. Exhaust fan(s) will run at low CFM while maintaining a balanced kitchen pressure.

Fan maximum/minimum speeds will be adjustable for proper kitchen balance. Fan direction change is also available from the touch screen interface without need for rewiring.

Duct Temperature Sensor(s) will be mounted in the exhaust hood riser(s). Temperature probes will be constructed of Stainless Steel. System will be factory pre-set to modulate fan speed within a range of 45°F for 600°F and 700°F cooking applications and a range of 5°F for 400°F cooking applications. Set-points are fully adjustable through the touch screen interface based on application needs.

The 100% Airflow Override will have an adjustable timeout value.

The panels include color coded wiring with as-built wiring diagrams, and spare terminals controlled by the fire system micro switch. The panel is factory pre-wired to shut down supply fans in a fire condition. Options to turn on the exhaust fans or turn off the hood lights in a fire condition will be configurable through the touch screen but only through a password protected menu to prevent any changes after a fire inspection has been performed.