

Sequence of Operation for EMSplus

NOTE: For better understanding, the default factory values are used in the sequence of operation below, however, those values are all adjustable through the Touch Screen interface.

Fan Sequence:

The operator turns on the cooking appliances in the morning and starts preparing food. Cooking has not yet started.

Once a temperature change of 5 degrees F (adjustable) above room temperature is detected by the EMSplus duct temperature sensors, the EMSplus automatically starts running the exhaust fans in Preparation Time Mode (very low speed) while keeping the Supply fan off.

The EMSplus automatically turns on the Hood lights when the exhaust fan for that specific hood starts running.

Once actual cooking starts, the temperature inside the duct rises more than 10 degrees F (adjustable) above room temperature. The exhaust fans ramp up to 80% (adjustable) of maximum speed and the associated make up air system, if equipped, will activate at that time and ramp up to the speed required to maintain the proper kitchen pressure balance.

As the appliance heating load increases, the fan speeds will increase proportionately with the exhaust air temperature to maintain full capture and containment as well as pressure balance. The fans ramp up to 100% speed if the heating load dictates.

In the event of any problem or need for full exhaust fan operation, the operator can press the 100% override button on the touchscreen and operate the fans at 100% speed. The system will go back to normal operation after 30 min or when the 100% override button is pressed off.

If there are multiple exhaust fans on the system and the individual Fan Control Option is left on, each exhaust fan can be turned on or off individually from the other ones. The supply fan modulates accordingly to keep proper pressure balance. Supply duct dampers should be used if necessary. If the Supply fan has a minimum CFM defined, the exhaust fans may be sped up or forced on if necessary to maintain kitchen pressure balance.

When the duct temperature sensor cools down below 8 degrees above room temperature (10 degrees F minus 2 degrees F hysteresis, adjustable), the fans shut down and the hood lights turn off automatically.

An operator can also manually turn on the fans and the hood lights through the touch screen.

Fire Condition and CO detector

In the event of a fire under the hood, the EMSplus will force all exhaust fans on at full speed and shut off all supply fans.

Similarly if a CO detector is wired to the EMSplus and is triggered, the EMSplus will also run all exhaust fans at full speed and shut off the supply fans.

Wash Sequence:

If the EMSplus includes a Self Cleaning system, the wash sequence automatically starts 20 seconds after the fans are turned off if the following conditions are met:

- At least one of the exhaust fans assigned to a wash zone has effectively run cumulatively for a period of time longer than the “Minimum Fan Runtime before Wash” value of 4 hours (adjustable).
- The amount of time elapsed since the previous wash cycle for that particular zone is greater than the “Minimum Time before Subsequent Washes” value of 8 hours (adjustable).

If the system is setup with multiple Wash Zones (maximum of 3) and the “Independent Wash Zones” option is disabled (factory default), Zone 1 will wash and once it is complete, the wash cycle will start over for Zone 2 after a delay of 15 minutes (adjustable), and then for Zone 3 if applicable.