

PMI-IF DDC with Economizer S0204 – Sequence of Operation

1. SYSTEM SWITCH “ON”

The supply and return fans start and run continuously. Unit operation is based on the supply air temperature and its setpoint. Unit will automatically operate in heating or economizer mode to maintain the supply air temp setpoint. The supply air temperature setpoint is limited between 50°F and 90°F (10°C and 32.2°C).

Heating Operation

The outdoor air temperature must be below the Outdoor Air Heating Enable setpoint for the furnace(s) to be allowed to operate.

Heating is called when the mixed air temperature drops below the supply air temperature setpoint, or if the Heating Override is set to ON. The heating operation is controlled by a PID loop which will call the appropriate number of heating stages (when more than one is available) and will modulate the furnace(s) to maintain the supply air temperature setpoint.

Economizer Operation

A minimum amount of fresh air will be maintained throughout economizer operation (Default: 20%).

Whenever possible, the unit will operate without calling heating and will modulate the fresh air dampers, return air dampers, and exhaust air dampers to maintain the Mixbox Air Temperature Setpoint (Defaults to the Supply Air Temperature Setpoint) within the mixbox. If the supply air temperature setpoint cannot be maintained, the unit will revert into heating mode. While in heating mode the dampers will modulate to use the most favourable air source.

2. SYSTEM SWITCH “OFF”

The unit is inoperative. The fresh air dampers and the exhaust air dampers are closed.

ADDITIONAL CONTROLS

1. AUTOMATIC LOW LIMIT

If the supply air temperature falls below the low limit threshold of 40°F (4.4°C), the unit shuts down. A five minute time delay on unit start-up allows for a cold start.

2. AUTOMATIC HIGH LIMIT

If the supply air temperature rises above the high limit threshold of 150°F (65.5°C), the unit shuts down. The unit requires a power cycle to resume normal operation.

3. COLD WEATHER FURNACE WARMUP

On unit start-up, when the outdoor air temperature drops below 20°F (-6.7°C), the unit will enable the burner for a short period of time before starting the supply fan to allow the heat exchanger to warmup before beginning normal operation.

4. FURNACE COOLDOWN

If the unit is shutdown while in heating mode, the supply fan will continue to run for a short period of time to cool off the heat exchanger.

NOTE: THE CONTROL SET-POINTS LISTED IN THIS DOCUMENT ARE FACTORY DEFAULTS AND MAY HAVE BEEN CHANGED BY OTHERS DURING FIELD INSTALLATION OR START-UP.