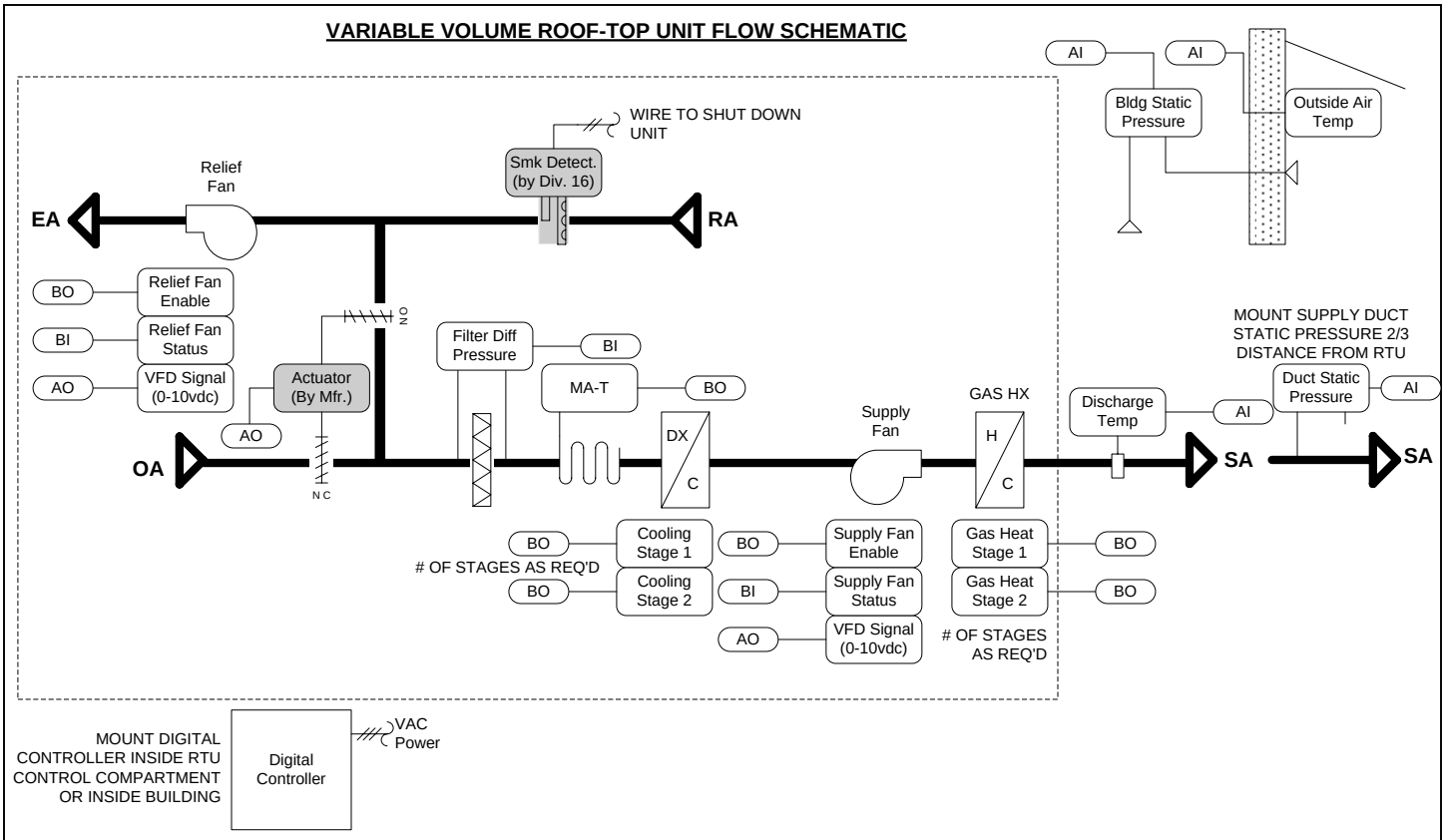
VARIABLE VOLUME ROOF-TOP UNIT FLOW SCHEMATIC



SEQUENCE OF OPERATION

A. OCCUPIED MODE:

1. SUPPLY FAN CONTROL: THE SUPPLY FAN SHALL BE ENABLED TO RUN CONTINUOUSLY. THE SUPPLY FAN VFD SHALL SLOWLY RAMP UP AND MODULATE TO MAINTAIN THE SUPPLY DUCT STATIC PRESSURE SETPOINT OF 1" W.C. (ADJ.)

2. SUPPLY AIR TEMPERATURE CONTROL: THE UNIT'S DISCHARGE AIR TEMPERATURE SETPOINT SHALL BE RESET BASED UPON OUTSIDE AIR TEMPERATURE (OAT). WHEN THE OAT IS 60°F AND ABOVE, THE SUPPLY AIR TEMPERATURE SETPOINT SHALL BE 55°F; WHEN THE OAT IS 0°F AND BELOW, THE SUPPLY AIR TEMPERATURE SETPOINT SHALL BE 68°F. WHEN THE OAT IS BETWEEN 0°F AND 60°F, THE SUPPLY AIR TEMPERATURE SETPOINT SHALL BE RESET IN A LINEAR MANNER.

3. ECONOMIZER DAMPERS: WHEN THE OUTDOOR AIR CONDITIONS (ENTHALPY-BASED) IS BELOW THE CHANGEOVER SETPOINT, THE OUTDOOR AIR DAMPER SHALL BE ALLOWED TO MODULATE BETWEEN MINIMUM POSITION AND FULL OPEN IN ORDER TO SATISFY THE ACTIVE SUPPLY AIR TEMPERATURE SETPOINT. MINIMUM OUTSIDE AIR DAMPER POSITION (ADJ.) SHALL BE CALCULATED BASED UPON SUPPLYING THE SCHEDULED MINIMUM OUTSIDE AIR VOLUME RATE. THE OUTSIDE AIR DAMPERS SHALL CLOSE IF ANY OF THE FOLLOWING CONDITIONS EXIST: (A) THE SUPPLY FAN IS OFF, (B) NIGHT SETBACK OPERATION, (C) MORNING WARM-UP OPERATION.

4. DX COOLING CONTROL: WHEN THE ECONOMIZER IS LOCKED-OUT OR IS UNABLE TO SATISFY THE ACTIVE SUPPLY AIR TEMPERATURE SETPOINT, MECHANICAL COOLING STAGES SHALL BE SEQUENCED ON WHEN THE OAT IS ABOVE THE COOLING LOCK-OUT TEMPERATURE OF 55°F (ADJ.). MECHANICAL COOLING SHALL BE LOCKED-OUT IF ANY OF THE FOLLOWING CONDITIONS EXIST: (A) THE SUPPLY FAN IF OFF, (B) ECONOMIZER HAS NOT BEEN FULLY UTILIZED (IF ENABLED), (C) OAT IS BELOW LOCK-OUT TEMPERATURE.

5. GAS HEATING CONTROL: THE GAS HEATING STAGES SHALL BE MODULATED IN ORDER TO MAINTAIN THE SUPPLY AIR TEMPERATURE SETPOINT.

6. RELIEF FAN CONTROL: THE RELIEF FAN SHALL BE MODULATED TO MAINTAIN THE BUILDING STATIC PRESSURE SETPOINT OF +0.02" W.C. (ADJ.).

7. ALARM SHUTDOWNS: (A) RETURN AIR SMOKE DETECTOR (ON UNIT WITH AT LEAST 2000 CFM)

B. UNOCCUPIED MODE:

DURING UNOCCUPIED PERIODS (BASED UPON TIME-OF-DAY SCHEDULING OR DURING A SHELTER-IN-PLACE ALARM), THE RTU SHALL BE DUTY-CYCLED IN ORDER TO MAINTAIN THE UNOCCUPIED SETPOINTS (60°F WINTER, 80°F SUMMER; BOTH ADJUSTABLE). DURING UNOCCUPIED PERIODS, THE OUTSIDE AIR DAMPER SHALL REMAIN CLOSED. A TIMED AFTERHOURS OVERRIDE (2-HOURS, ADJ.) CAN BE INITIATED THROUGH A PUSHBUTTON ON THE ZONE SENSOR.

C. MORNING WARMUP:

WHEN THE RTU IS IN MORNING WARMUP HEATING MODE, THE SUPPLY FAN SHALL RUN CONTINUOUSLY, THE VFD SHALL MODULATE TO MAINTAIN THE SUPPLY DUCT STATIC PRESSURE SET POINT, THE ECONOMIZER DAMPERS SHALL BE POSITIONED TO FULL RETURN AIR, AND THE GAS HEATING SHALL BE MAINTAIN A DISCHARGE AIR SET POINT OF 98°F (ADJ.). THE VAV BOXES SHALL BE PLACED IN HEATING MODE, WITH ALL LOCAL HEAT DISABLED. THE RTU SHALL REMAIN IN MORNING WARMUP MODE UNTIL THE RETURN AIR TEMPERATURE REACHES 80°F (ADJ.).