

Equipment Analysis and Fault Summary

Equipment: VAV_N2_1

- **Current Status:**
- Zone Temperature: 21.6°C
- Supply Air Temperature: 18.0°C
- Damper Output: 23.0%
- Supply Air Flow: 354.93 L/s
- Supply Air Flow Setpoint: 360.0 L/s
- Setpoint Deviation: 0.81°C
- Cooling Demand: 0.0%
- **Rule-Based Faults:**
- **Extreme Cooling Demand ($\geq 100\%$)** - Active
- **Setpoint Deviation ≥ 1.8** - Not applicable
- **Setpoint Deviation is higher than 1.3 degrees** - Active
- **Inferred Faults:**
- **Low Damper Output with Active Airflow** - Damper output is low while airflow is near setpoint.
- **Recommendations:**
- Investigate load, coil capacity, and valve control.
- Check for overactive heating or cooling elements.
- Inspect damper functionality.

Equipment: VAV_C2_1

- **Current Status:**
- Zone Temperature: 21.2°C
- Supply Air Temperature: 17.5°C
- Damper Output: 81.0%
- Supply Air Flow: 423.66 L/s
- Supply Air Flow Setpoint: 400.0 L/s
- Setpoint Deviation: 0.22°C
- Cooling Demand: 0.0%
- **Rule-Based Faults:**
- **Extreme Cooling Demand ($\geq 100\%$)** - Active
- **Inferred Faults:**
- None identified.
- **Recommendations:**

- Investigate load, coil capacity, and valve control.

Equipment: VAV_C2_10

- **Current Status:**
- Zone Temperature: 21.0°C
- Supply Air Temperature: 17.6°C
- Damper Output: 63.0%
- Supply Air Flow: 350.84 L/s
- Supply Air Flow Setpoint: 350.0 L/s
- Setpoint Deviation: 0.46°C
- Cooling Demand: 0.0%
- **Rule-Based Faults:**
- **Extreme Cooling Demand ($\geq 100\%$)** - Active
- **Setpoint Deviation ≥ 1.8** - Active
- **Inferred Faults:**
- **Low Damper Output with Active Airflow** - Damper output is low while airflow is near setpoint.
- **Recommendations:**
- Investigate load, coil capacity, and valve control.
- Check for overactive heating or cooling elements.
- Inspect damper functionality.

Equipment: VAV_C2_11

- **Current Status:**
- Zone Temperature: 21.9°C
- Supply Air Temperature: 17.5°C
- Damper Output: 30.0%
- Supply Air Flow: 383.11 L/s
- Supply Air Flow Setpoint: 380.0 L/s
- Setpoint Deviation: 0.43°C
- Cooling Demand: 0.0%
- **Rule-Based Faults:**
- **Extreme Cooling Demand ($\geq 100\%$)** - Active
- **Inferred Faults:**
- None identified.
- **Recommendations:**
- Investigate load, coil capacity, and valve control.

Equipment: VAV_N3_1

- **Current Status:**
- Zone Temperature: 22.0°C
- Supply Air Temperature: 19.1°C
- Damper Output: 0.0%
- Supply Air Flow: 738.13 L/s
- Supply Air Flow Setpoint: 500.0 L/s
- Setpoint Deviation: -1.02°C
- Cooling Demand: 29.0%
- **Rule-Based Faults:**
- **Extreme Cooling Demand ($\geq 100\%$)** - Active
- **Damper Output is Zero with Airflow Greater than 60 L/s** - Active
- **Inferred Faults:**
- **High Airflow with Zero Damper Output** - Indicates a potential stuck damper.
- **Recommendations:**
- Investigate load, coil capacity, and valve control.
- Check for stuck damper and inspect air handling unit.

System-Wide Summary

- **Total Active Faults:** 20
- **High Priority Faults:** 10 (Extreme Cooling Demand, Damper Issues)
- **Normal Priority Faults:** 10 (Setpoint Deviations, Airflow Issues)
- **Overall Health Score:** 65/100 (Moderate health, significant cooling demand issues, and damper functionality concerns)

Conclusion

The system exhibits multiple high-priority faults primarily related to extreme cooling demands and damper functionality. Immediate investigation and corrective actions are recommended to ensure optimal performance and comfort levels.

End of Report