| **Variable Name** | **Description** | **Default Value** |
| --- | --- | --- |
| **ATSF** | Temperature rise across the supply fan | 1°C (2°F) |
| **ATmin** | Minimum difference between OAT and RAT to evaluate economizer error conditions | 6°C (10°F) |
| **ESAT** | Temperature error threshold for SAT sensor | 1°C (2°F) |
| **ERAT** | Temperature error threshold for RAT sensor | 1°C (2°F) |
| **EMAT** | Temperature error threshold for MAT sensor | 3°C (5°F) |
| **EOAT** | Temperature error threshold for OAT sensor: 1°C (2°F) if local sensor @ unit, 3°C (5°F) if global OAT sensor |  |
| **F** | Airflow error threshold | 30% |
| **EVFDSPD** | Variable-speed drive (VSD) speed error threshold | 5% |
| **£DSP** | Duct static pressure (DSP) error threshold | 25 Pa (0.17 inH2O) |
| Delta OSmax | Maximum number of changes in operating state (OS) during the previous 60 minutes (moving window) to flag PID hunting issues | 7 state changes |

**Five-minute Rolling Averages with 1-Minute Sampling Time**

* **SATavg**: Rolling average of supply air temperature.
* **MATavg**: Rolling average of mixed air temperature.
* **RATavg**: Rolling average of return air temperature.
* **OATavg**: Rolling average of outdoor air temperature.
* **DSPavg**: Rolling average of duct static pressure.
* **CCETavg**: Rolling average of cooling-coil entering temperature.
* **CCLTavg**: Rolling average of cooling-coil leaving temperature.
* **HCETavg**: Rolling average of heating-coil entering temperature.
* **HCLTavg**: Rolling average of heating-coil leaving temperature.
* **%OA**: Actual outdoor air fraction as a percentage, calculated as **(MAT - RAT)/(OAT - RAT)**, or per airflow measurement station if available.
* **%OAmin**: Active minimum outdoor air set point (**MinOAsp**) divided by actual total airflow (from sum of VAV box flows or by airflow measurement station) as a percentage.
* **0s**: Number of changes in operating state during the previous 60 minutes (moving window) for an AHU (Air Handling Unit) in heating, economizing, economizing plus mechanical cooling, or mechanical cooling modes.

**AHU operating states defined by ASHRAE G36**

A picture containing line, diagram, plot, text

Description automatically generated