

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.
- **Os**: 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

