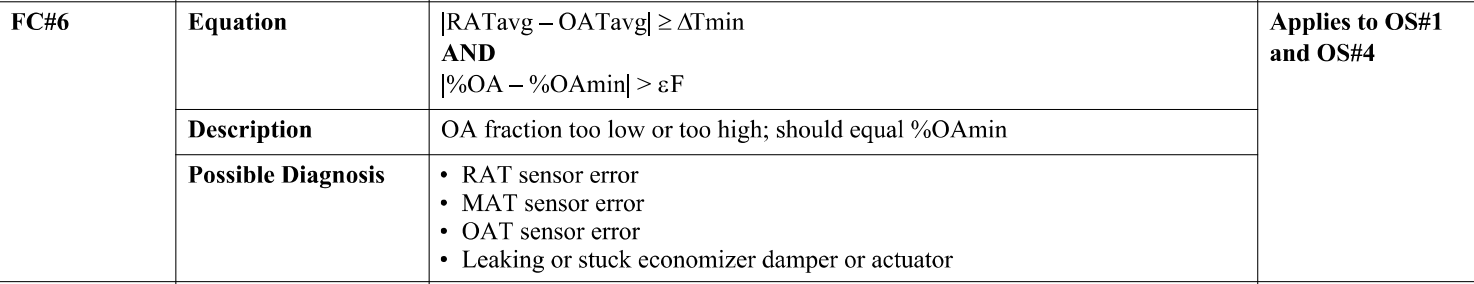
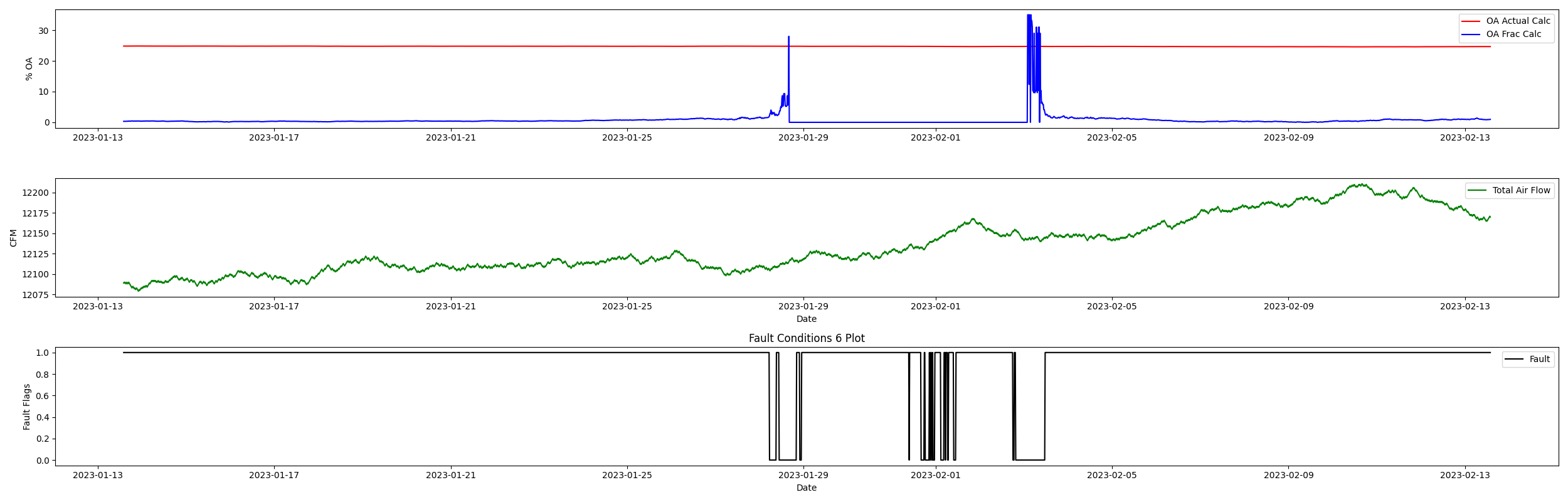
Fault Condition Six Report

Fault condition six of ASHRAE Guideline 36 is an attempt at verifying that AHU design minimum outside air is close to the calculated outside air fraction through the outside, mix, and return air temperature sensors. The plot below attempts to show the outside air fraction calculation between the return, mix, and outside air temperature sensors Vs an actual outside air flow through the AHU based on the total outdoor air calculation minus the design outdoor air expressed as a percentage. A fault will get flagged if the OA fraction is too low or too high. Fault condition six equation as defined by ASHRAE:



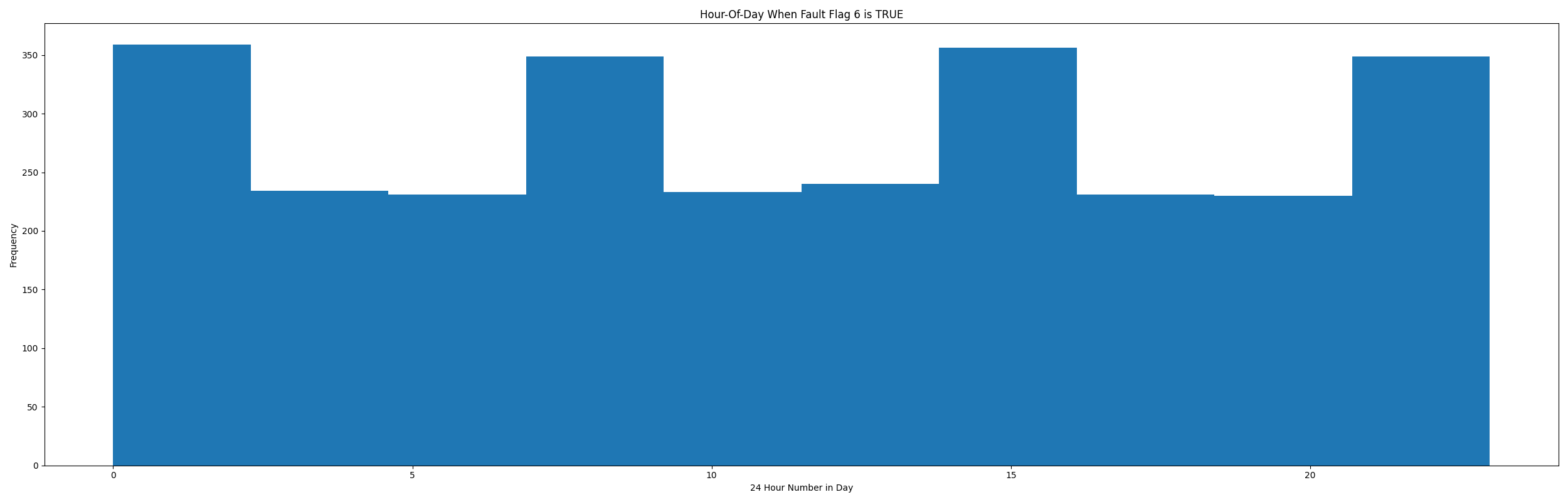
## Dataset Plot



## Dataset Statistics

* Total time in days calculated in dataset: 30.99
* Total time in hours calculated in dataset: 743.75
* Total time in hours for when fault flag is True: 702.75
* Percent of time in the dataset when the fault flag is True: 94.49%
* Percent of time in the dataset when the fault flag is False: 5.51%

## Time-of-day Histogram Plots



* When fault condition 6 is True the average AHU total air flow is 12134.72 in CFM and the outside air calculation is 0.52 in %. This could possibly help with pin pointing AHU operating conditions for when this AHU is drawing in excessive outside air.

## AHU Total Air Flow Statistics

* count 2976.000000  
  mean 12134.616263  
  std 34.218034  
  min 12079.000000  
  25% 12109.000000  
  50% 12121.000000  
  75% 12161.000000  
  max 12211.000000  
  Name: vav\_total\_flow, dtype: float64

## OA Calculation Statistics

* count 2976.000000  
  mean 0.776762  
  std 2.505592  
  min 0.000000  
  25% 0.212121  
  50% 0.387755  
  75% 0.804480  
  max 35.000000  
  Name: percent\_oa\_calc, dtype: float64

## Suggestions based on data analysis

* The percent true metric maybe yeilding sensors are out of calibration either on the AHU outside, mix, or return air temperature sensors that handle the OA fraction calculation or the totalized air flow calculation handled by a totalizing all VAV box air flows or AHU AFMS. Air flow and/or AHU temperature sensor may require recalibration.

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