Auto Data Clean

Data Cleaning Workflow:

Initial Data Extraction:

- **File Reading,** Data Parsing, Hexadecimal values are converted to decimal and then to analog voltages

Data Grouping:

- **Grouping**: The data is categorized into different groups based on detector types

Noise Subtraction:

- **Noise Removal:** Noise is subtracted from each group using data from reference columns (e.g., 'Dark-1' and 'Dark-2')

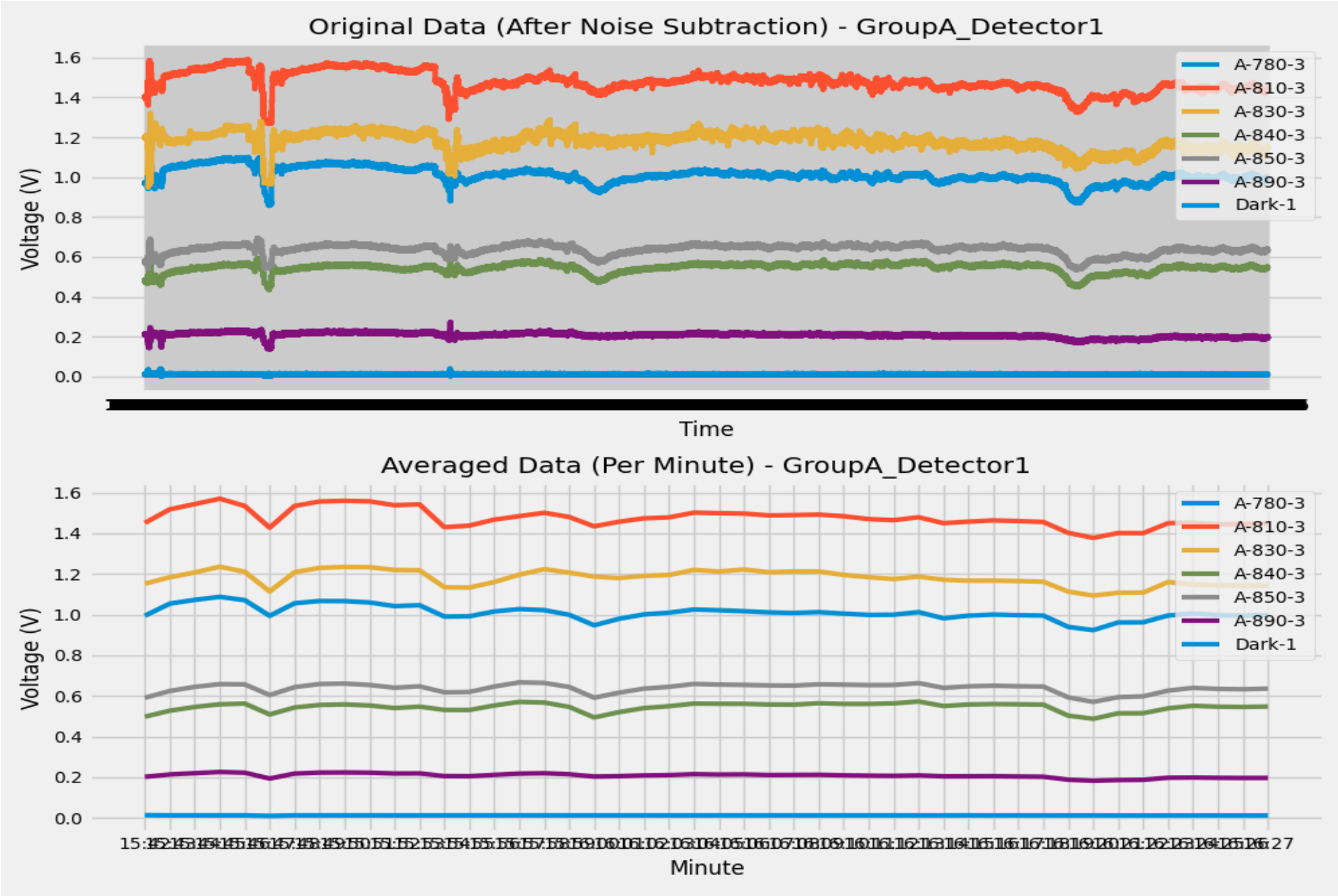
Motion Correction and Smoothing:

- **Motion Correction:** This involves identifying and removing spikes from the data based on a z-score threshold.
- **Variance Check :** If the variance exceeds a predefined threshold, the data undergoes smoothing using the auto_savgol function.

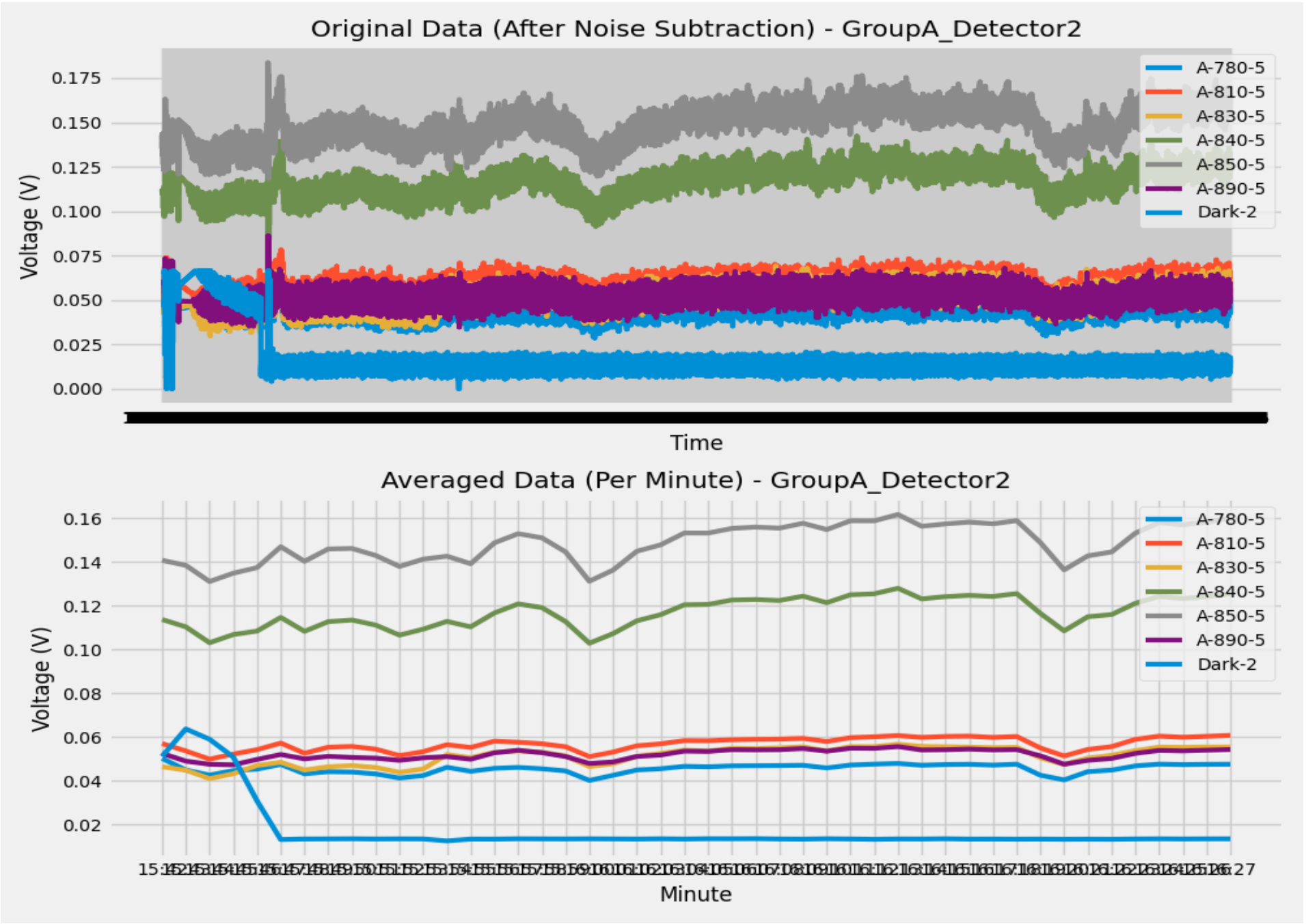
Data Averaging:

- **Averaging**: The data is averaged by minute to further smooth out fluctuations and make the dataset more manageable.

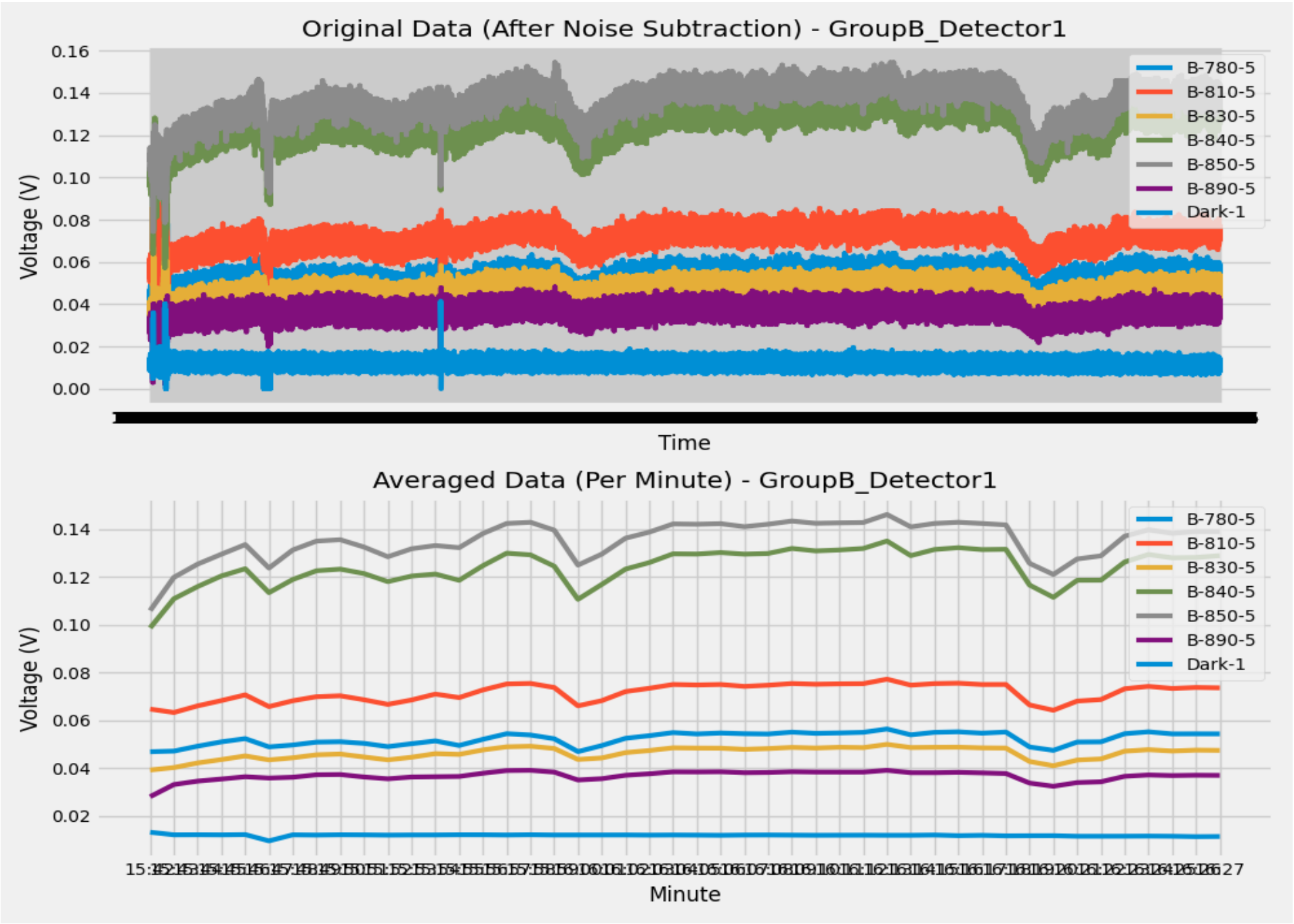
File: 1020008_30+1_20240813.log **GroupA_Detector1**



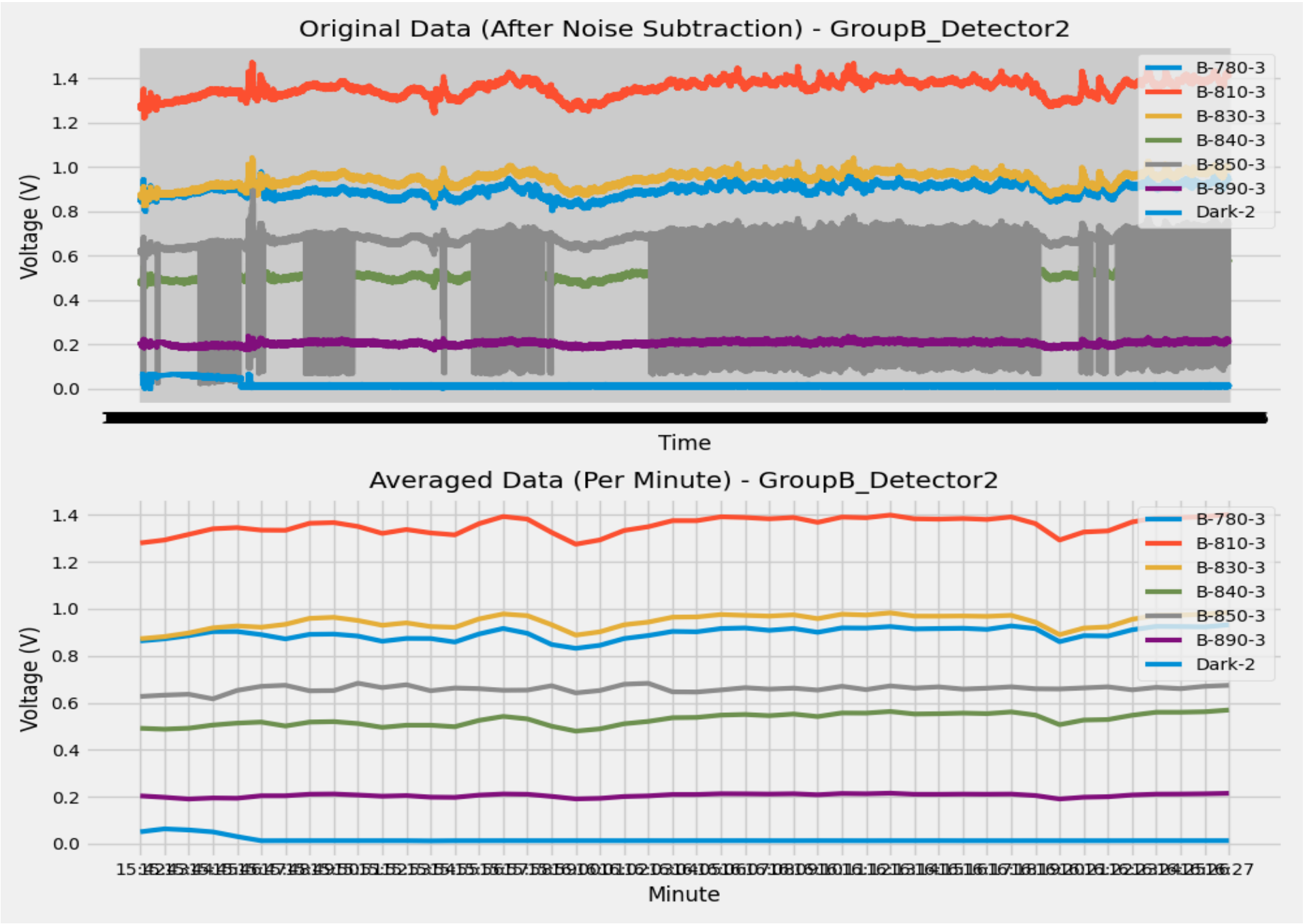
File: 1020008_30+1_20240813.log **GroupA_Detector2**



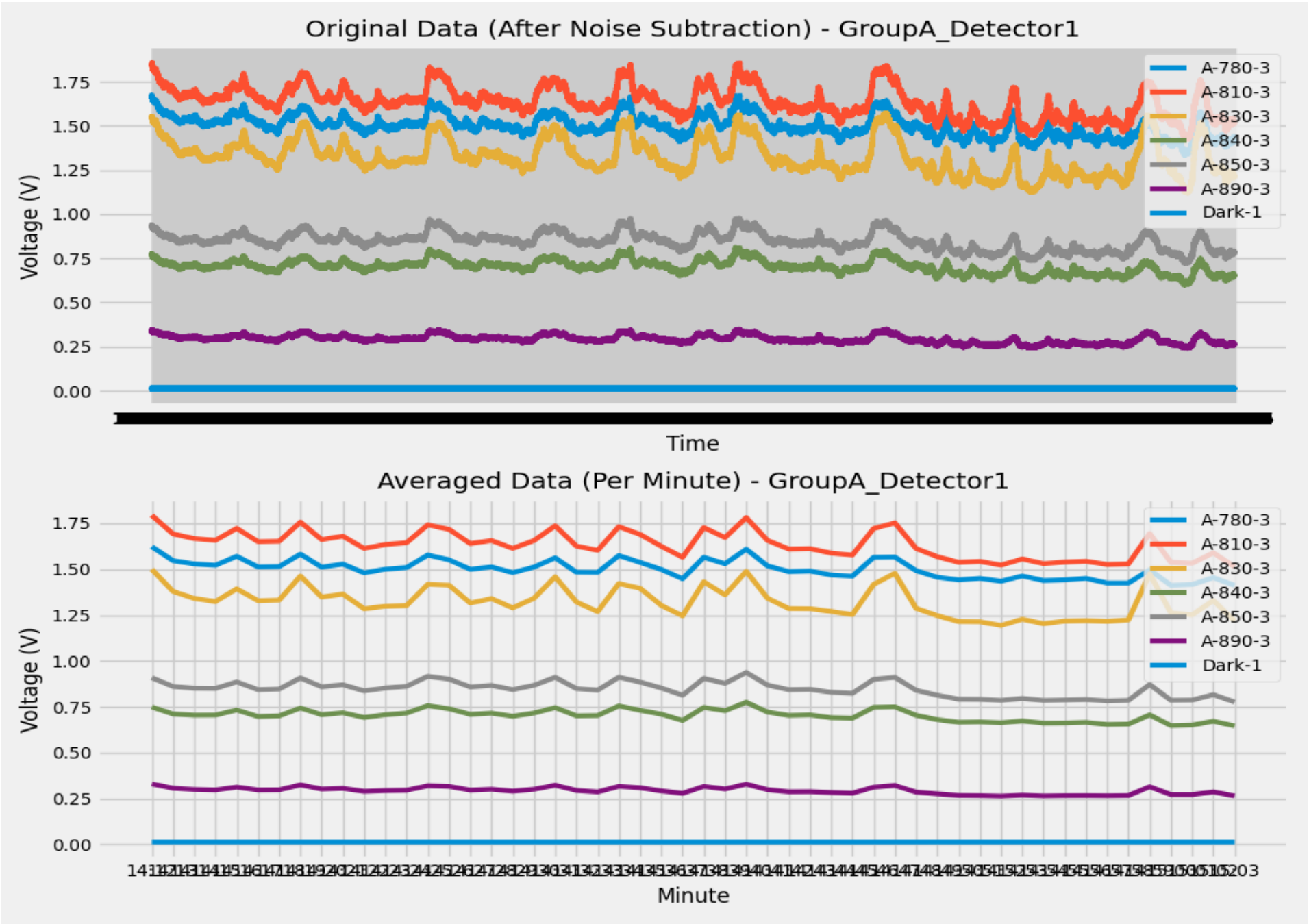
File: 1020008_30+1_20240813.log **GroupB_Detector1**



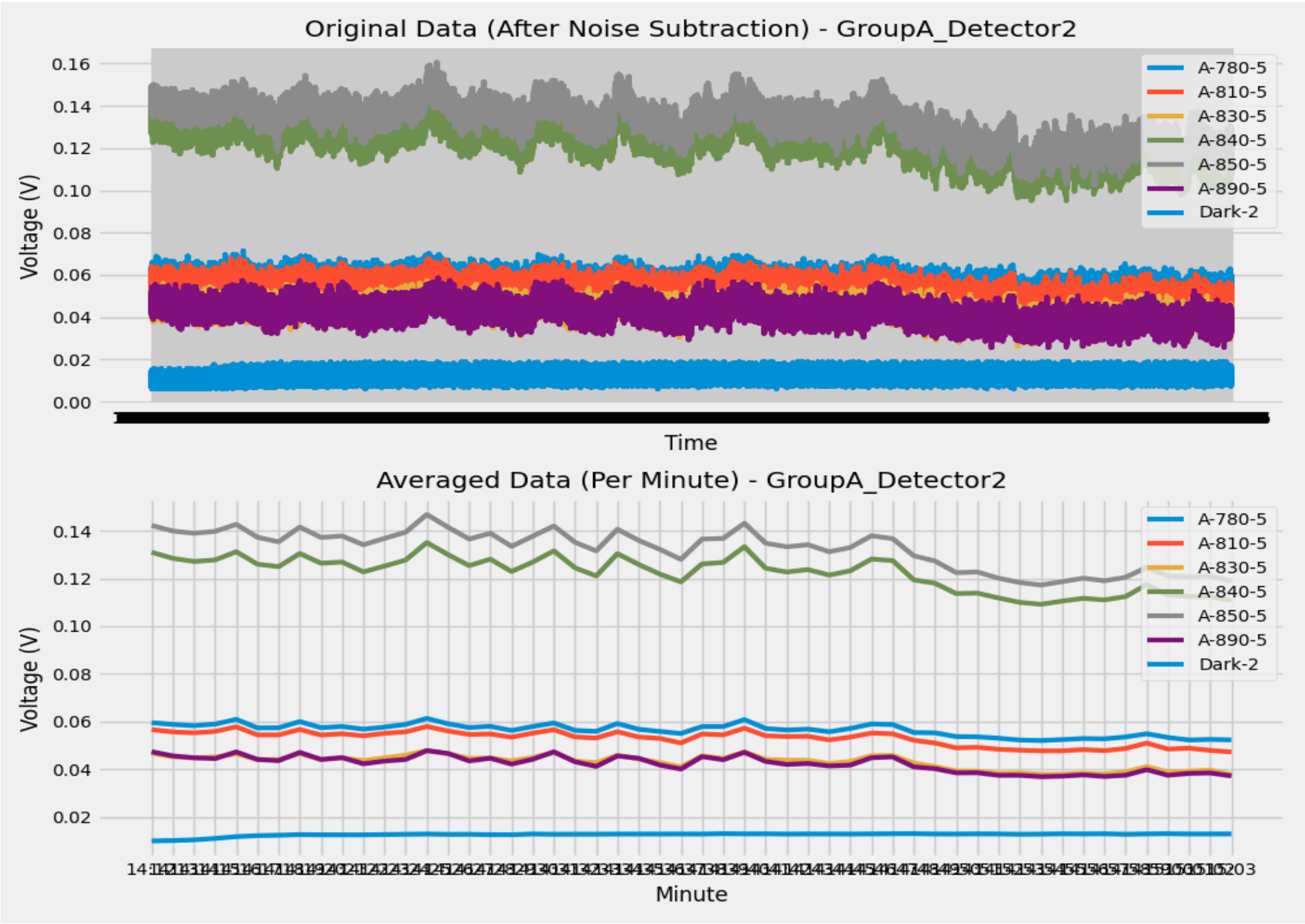
File: 1020008_30+1_20240813.log **GroupB_Detector2**



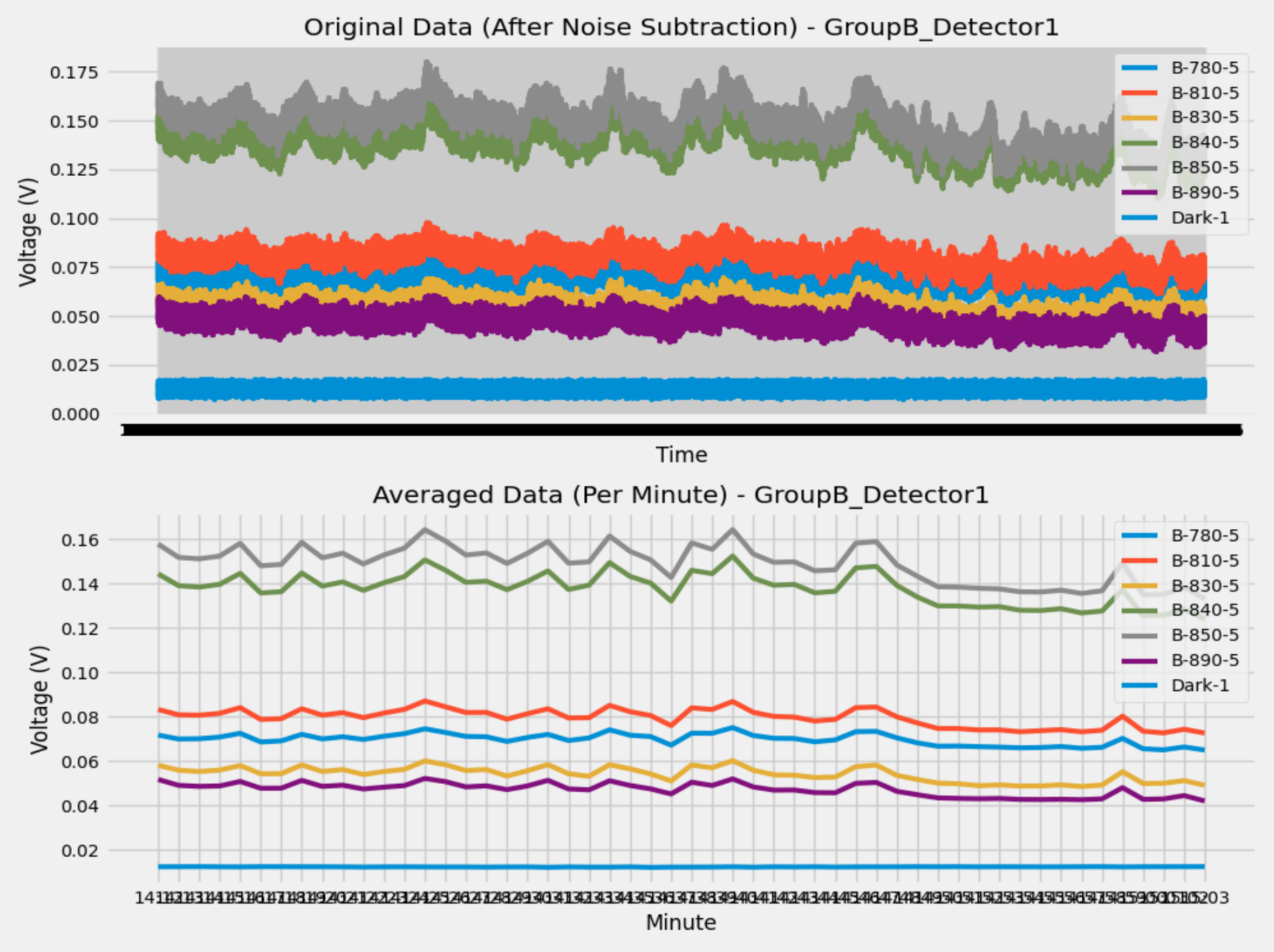
File: 1020004_35+2_20240821_2.log **GroupA_Detector1**



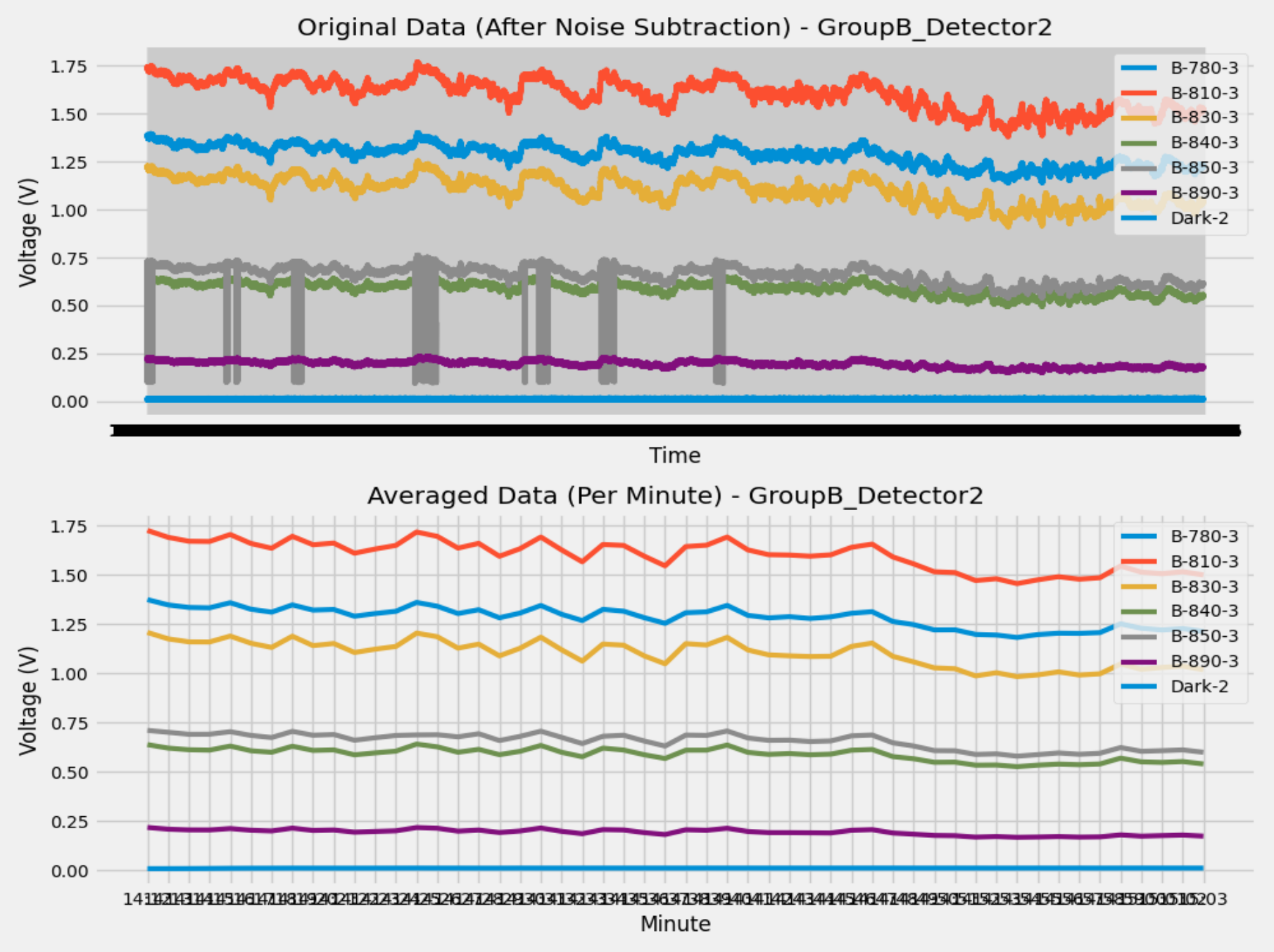
File: 1020004_35+2_20240821_2.log **GroupA_Detector2**



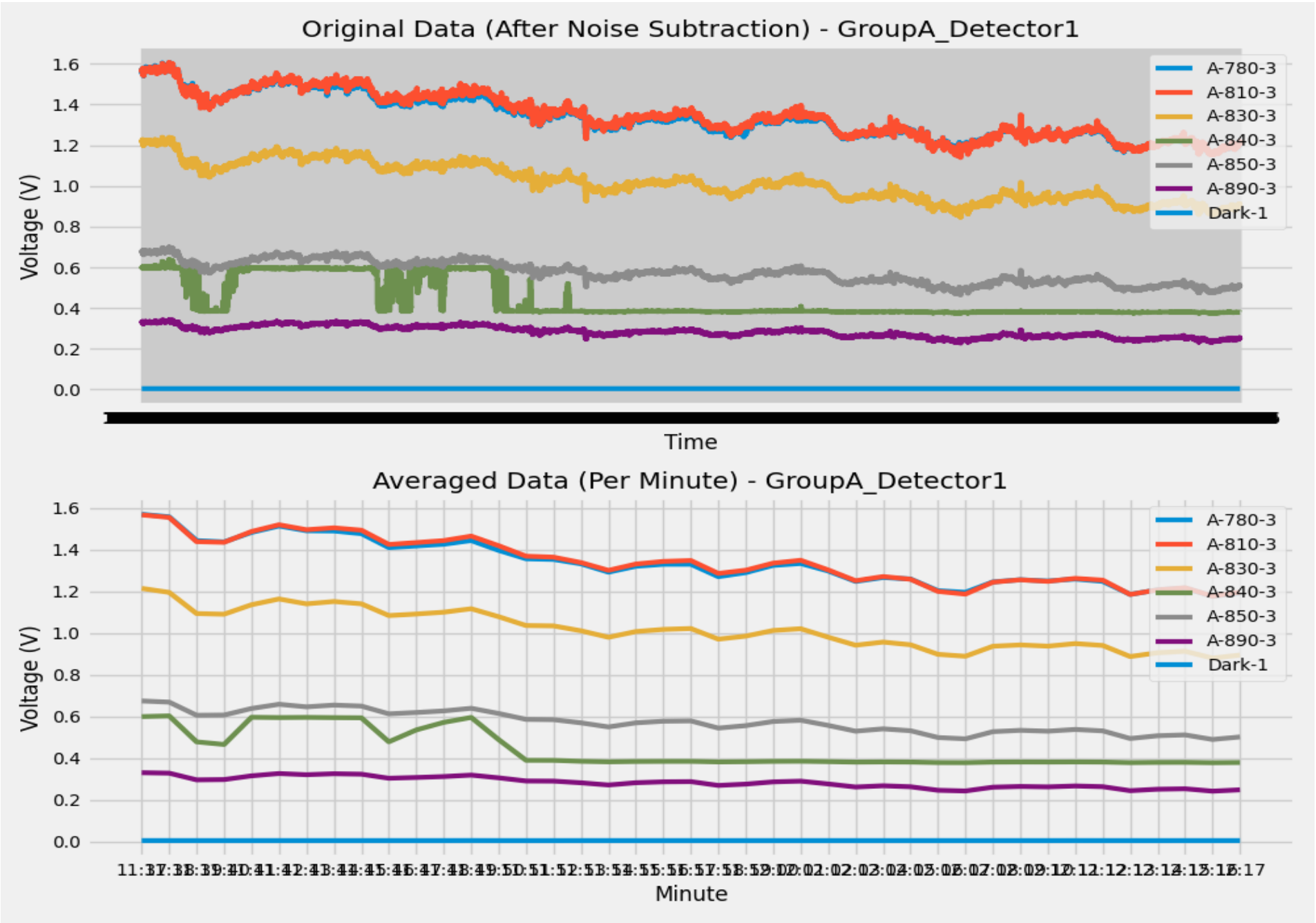
File: 1020004_35+2_20240821_2.log **GroupB_Detector1**



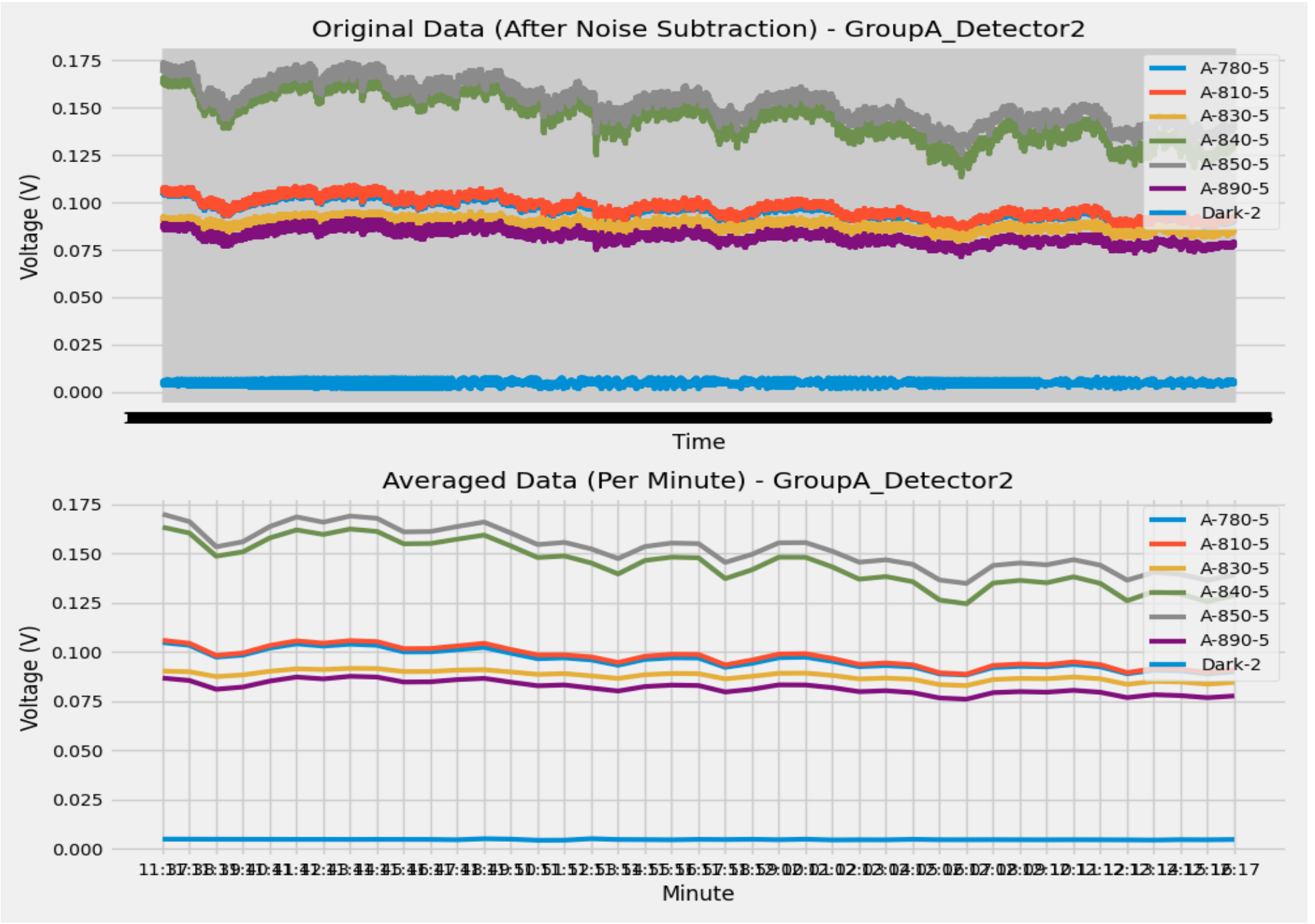
File: 1020004_35+2_20240821_2.log **GroupB_Detector2**



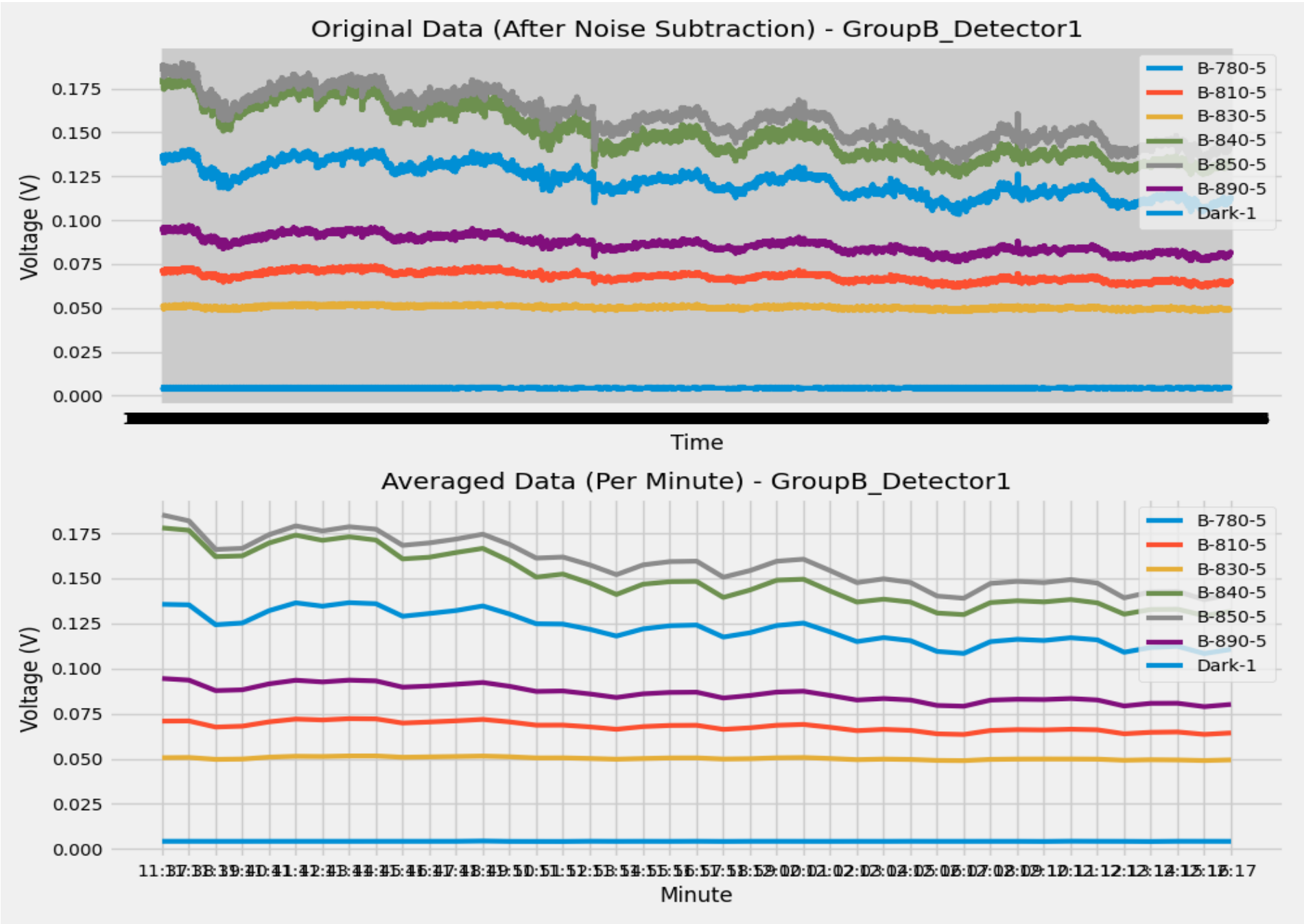
File: 1010016_27+0_20240628.log GroupA_Detector1



File: 1010016_27+0_20240628.log GroupA_Detector2



File: 1010016_27+0_20240628.log GroupB_Detector1



File: 1010016_27+0_20240628.log GroupB_Detector2