

Electrical Measurement Data Analysis Using MATLAB

Objective

The objective of this project is to analyze electrical measurement data and understand system behavior using MATLAB.

Methodology

Synthetic time-based electrical signals representing voltage, current, and temperature were generated in MATLAB. The signals were visualized using time-domain plots. Basic statistical analysis was performed to extract key parameters such as mean voltage, peak current, and temperature trend.

Results

- The voltage signal showed stable sinusoidal behavior around the nominal value.
- The current signal remained within expected operating limits.
- The temperature exhibited a gradual increasing trend over time.

Key extracted parameters:

- Mean Voltage: ~230 V
- Maximum Current: ~5.5 A
- Final Temperature: ~27 °C

Conclusion

The project successfully demonstrated the use of MATLAB for electrical data analysis, visualization, and basic system validation. Such analysis techniques are useful for supporting electrical engineering tasks related to testing, monitoring, and documentation.