

Case Study

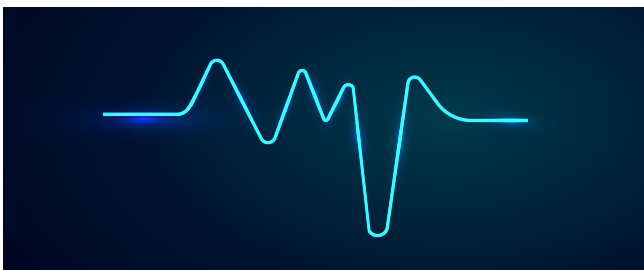
Unraveling Grid Faults – The Mystery of Voltage Dips



A major industrial company in Denmark recently sought to enhance the reliability of their power supply across their facilities. To achieve this, they collaborated with [Eluminate](#), Elspec's local agent, leveraging advanced power quality assessments to uncover and address potential issues. Central to this effort was the use of Elspec's G4500 portable power quality analyzer, renowned for its precision and reliability thanks to its continuous waveform recording of up to 1048 samples per cycle and its storage capabilities.

The Challenge

During the assessments, Eluminate identified unusual voltage dips in the data. These dips were perplexing as they didn't coincide with any noticeable current increases within the facilities, suggesting that the cause might lie outside the company's immediate control.



Solution

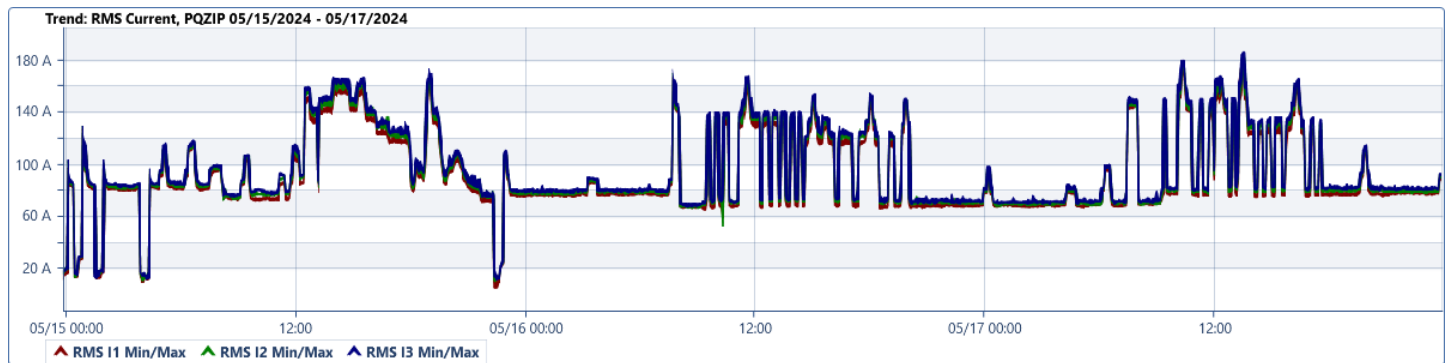
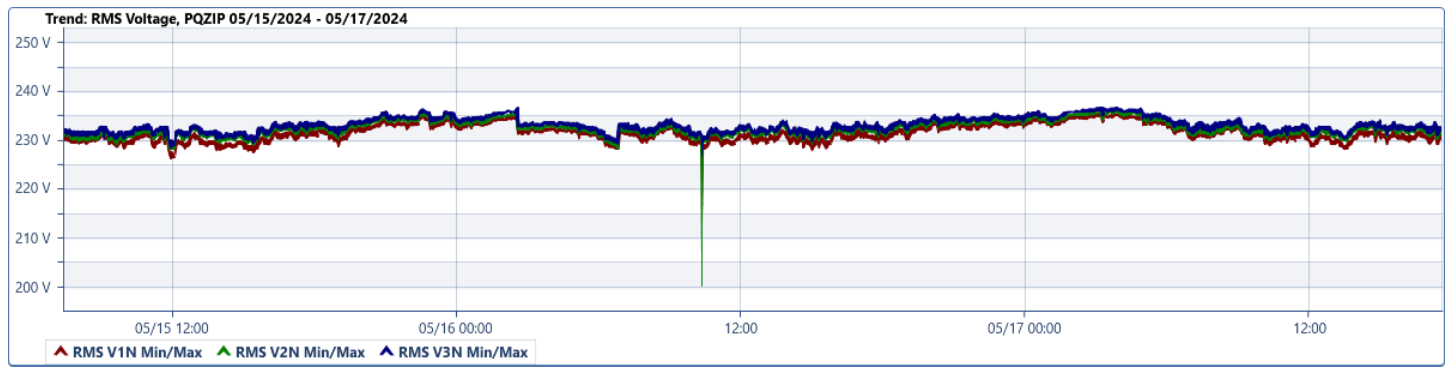
To get to the bottom of this mystery, the team at Eluminate conducted a detailed analysis using the G4500 [power quality analyzer](#). This investigation included:

- Analyzing the high-resolution data (@1/2 cycle) on voltage and current trends.
- Cross-referencing the anomalies with external reports to understand potential external influences.

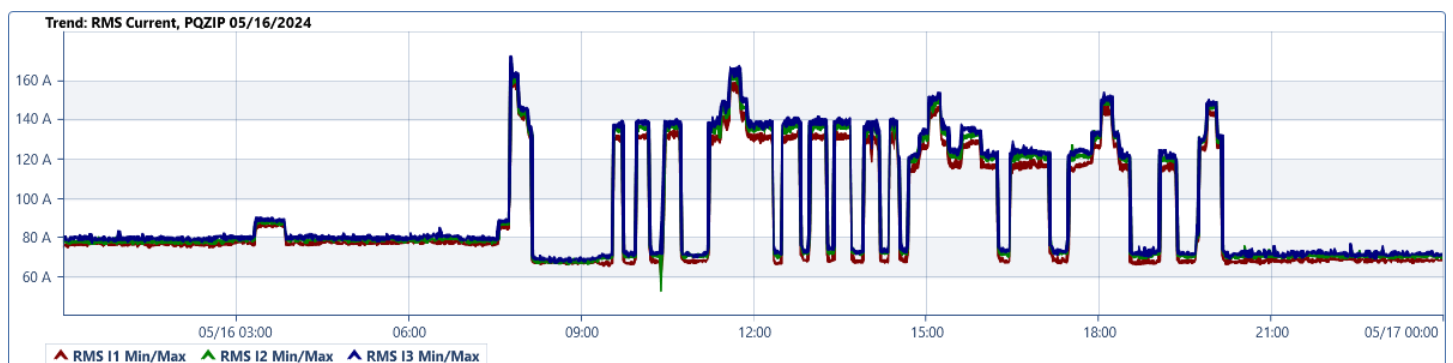
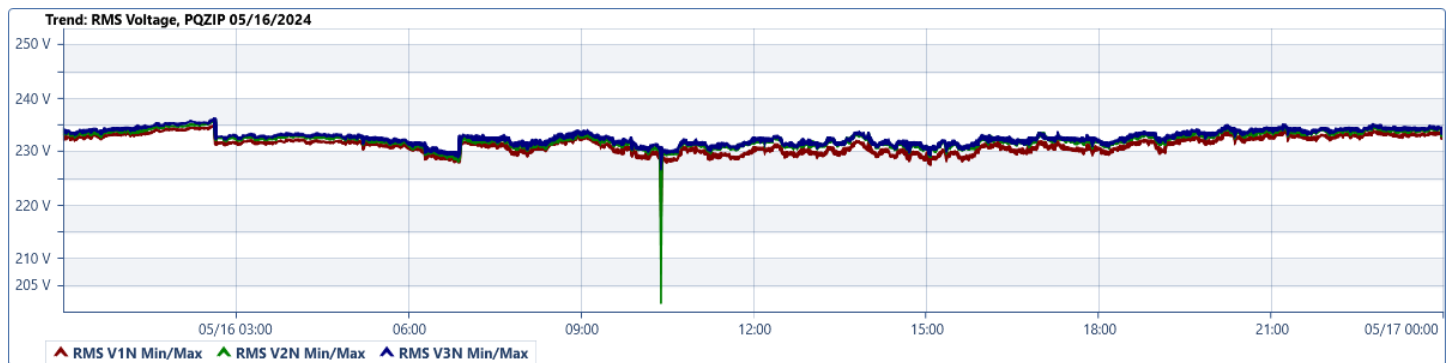
Identifying the Cause

The investigation revealed that the voltage dips coincided with a grid fault reported by Energinet, Denmark's national transmission system operator at the exact time ([see here](#)). This was a clear instance of a grid fault affecting the facility's power supply

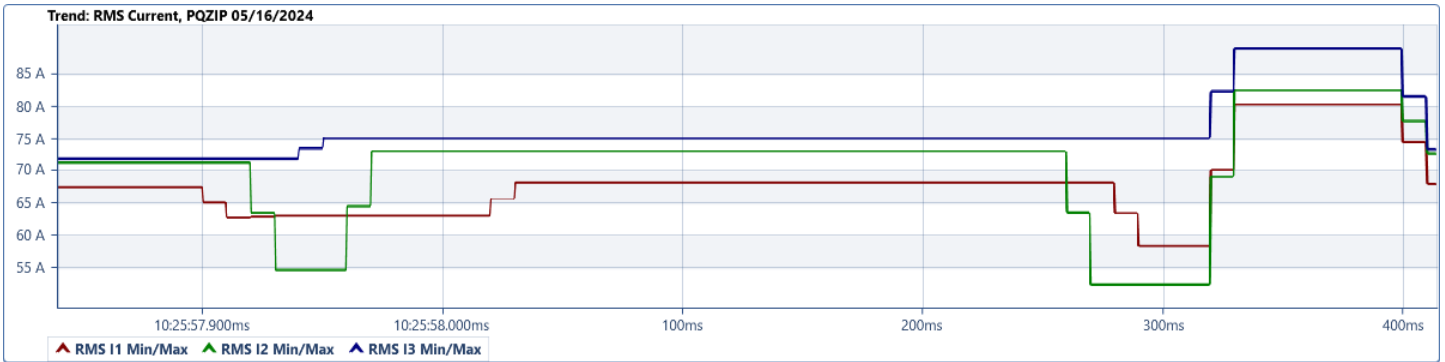
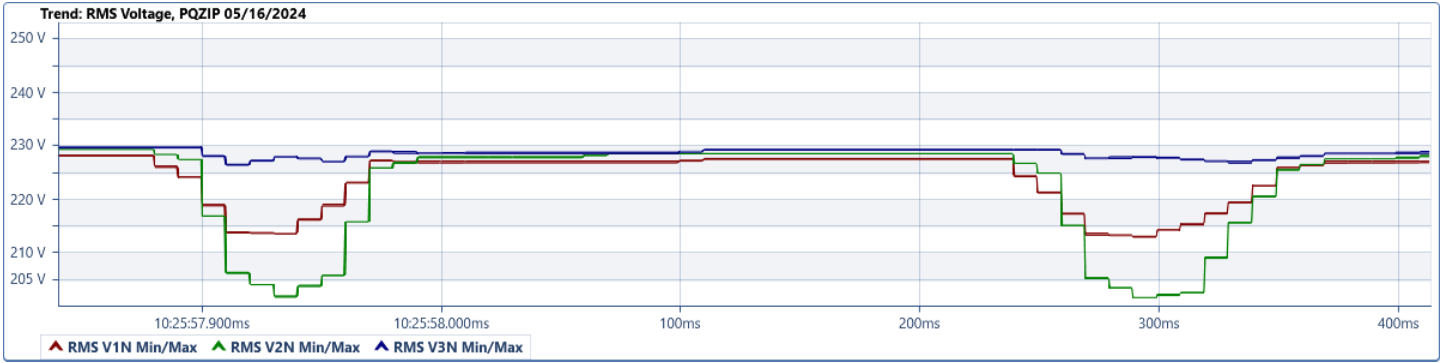
3-Days view: RMS voltage & current



One day loading cycle



Event source detection: upstream voltage dip



Understanding Voltage Dips

Voltage dips are short-term reductions in voltage, often caused by faults in the power grid. While brief, their impact on industrial operations can be significant, potentially disrupting sensitive equipment and halting production processes.

Conclusions

The use of Elspec's G4500 power quality analyzer enabled to uncover the true cause of the voltage dips affecting the industrial company's facilities. By identifying the grid fault source, the company could take informed steps to mitigate similar issues in the future.

Looking Ahead

This case study showcases how Elspec's innovative products helped to achieve superior power quality management, demonstrating the tangible benefits of continuous power quality monitoring and analysis.



Ask us about our complete line of Power Quality Solutions www.quality-energy.com



Headquarters
Elspec Ltd.
info@elspec-ltd.com

North America
Quality Energy
info@quality-energy.com

Europe
Elspec Portugal Lda.
info@elspeceurope.com

India
Elspec Engineering India Pvt Ltd.
info@elspec.in

Región Andina
Elspec Andina
info@elspec.com.co