

AUTOMATED ENGINEERING



In this brochure you will get a firsthand look at our distinctive sustainable energy solutions. This includes our latest suite of automated engineering tools designed for streamlined modeling and simulations, effectively automating the engineering workflow and enhancing the efficiency of electrical power systems.

This not only translates to significant savings in terms of time and money but also mitigates potential risks. Alewijnse stands out as a pioneer in this achievement, making us one of the select few enterprises capable of delivering such advanced systems to the maritime sector.

In short: Automate The Boring, Engineer The Awesome (ATBETA)

COMPANY PROFILE

At Alewijnse, we are driven by a passion for connecting people and technology, a legacy we have upheld for more than 130 years.

As an allround systems integrator, we partner with our clients to provide a comprehensive range of electrical and automation solutions. Our expertise encompasses electrical installations, power distribution, generation, propulsion systems, process automation, audio-video and IT, safety and security, as well as navigation and communications.

In response to the ever-increasing need for sustainable operations, we strive to design and implement environmentally-friendly propulsion and energy-efficient systems for maritime and industrial partners that seek high levels of sustainability.

In line with this we introduce cutting edge consultancy with sustainable simulation models, focusing on hybrid battery energy solutions, return on investment projections, battery type selections, and insightful event analyses of DP2/DP3 vessels.

In this way we develop and improve solutions that are innovative and of the highest quality in order to make a valuable contribution to successful projects in the maritime and industrial sectors.



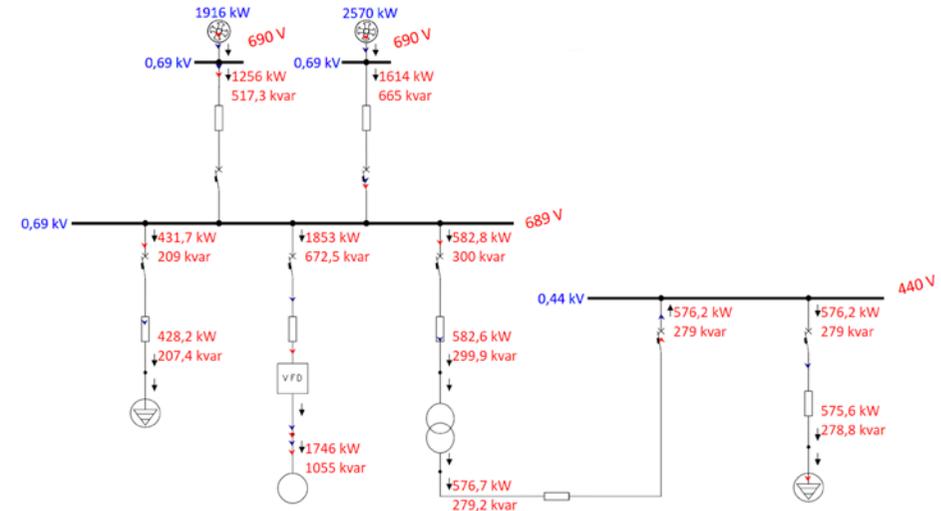
Alewijnse: Your partner in advanced electrical solutions

UNLOCKING THE POWER OF ELECTRICAL ANALYSIS

Alewijnse leads the way in providing cutting-edge hybrid electrical network analysis of combined AC and DC grids and battery sizing based on a detailed energy profile analysis through MATLAB-Simulink. Additionally, our team has designed innovative electrical hybrid power system models in ETAP simulation software capable of conducting diverse studies and time-domain analysis simulations.

LOAD FLOW ANALYSIS: PIONEERING DIGITAL TWINS

With our load flow analysis models, we have made an important step towards full digital twin models. This advancement empowers you with the tools needed for an even more detailed analysis of your hybrid electrical network system.

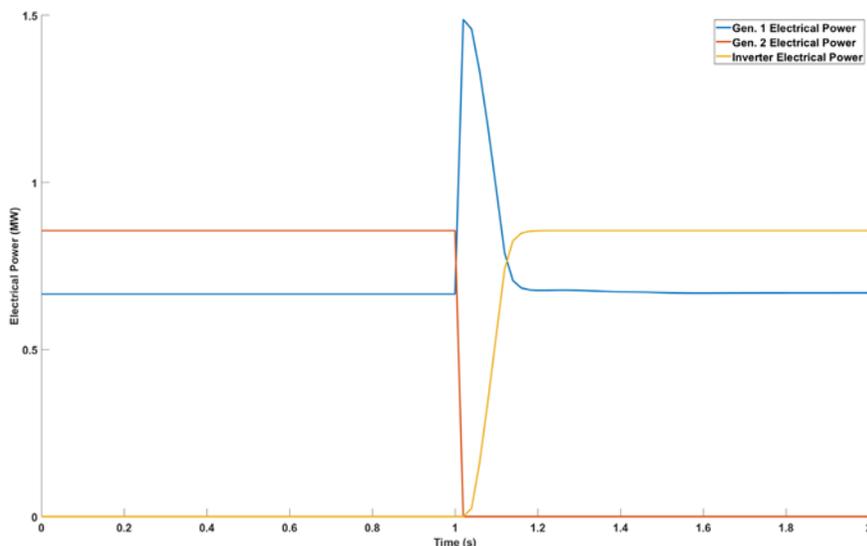


SHORT-CIRCUIT CALCULATIONS: SAFEGUARDING WITH PRECISION

Understanding the magnitude of a short-circuit current is essential for the accurate selection of appropriate protection devices. These currents are calculated in accordance with the relevant (maritime) international standards.

Using the simulation model for these calculations facilitates the analysis of diverse scenarios and configurations, guarantees precise circuit breaker selection, and simplifies the reporting and documentation procedures.

Furthermore, the model provides opportunities to investigate short-circuit currents and generator stability in the time domain.

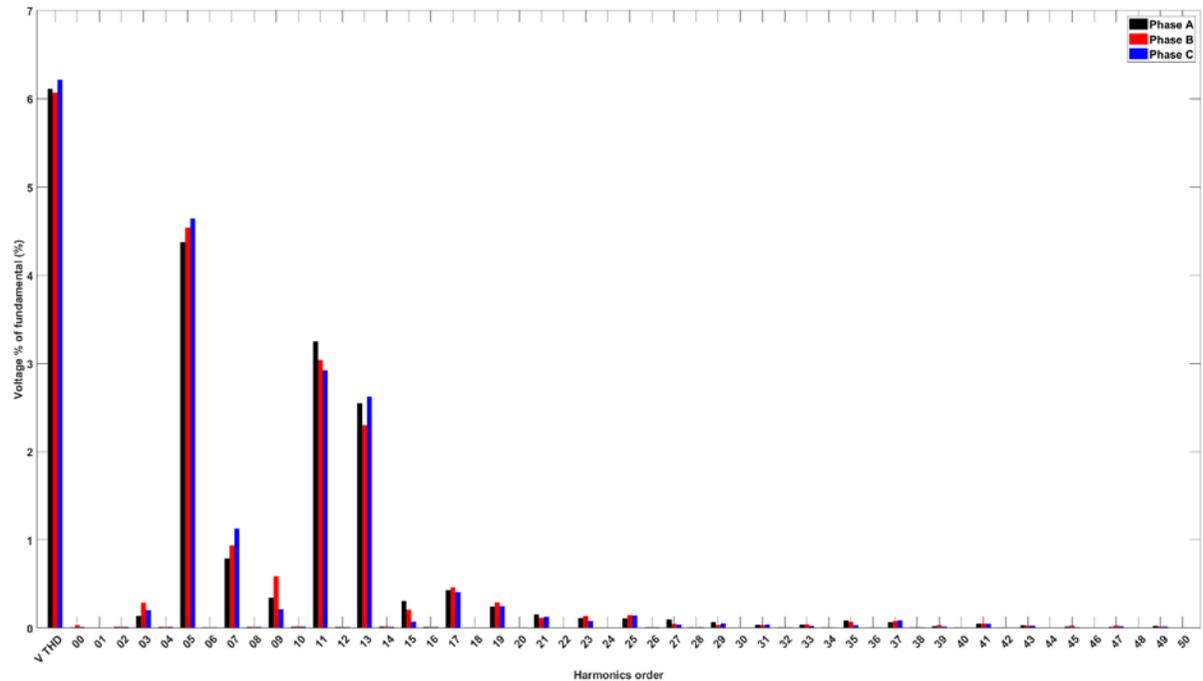


PROTECTION & COORDINATION

Within the protection and coordination study, we ensure that the system can selectively trip circuit breakers to safeguard its components in the event of a fault condition. It determines the time required for the breaker to disconnect the fault, ensures backup protection, and strives to prevent blackouts.

The simulation model simplifies the configuration and verification of circuit breaker parameters, ensuring that the protection functions as intended. This not only reduces risks but also simplifies the analysis of diverse protection and coordination strategies.





POWER QUALITY

Power quality characterises the purity of sinusoidal voltage and current waves, a critical factor influencing the efficiency of the electrical power system.

Harmonics, in particular, can lead to significant disruptions and are subject to stringent distortion limits established by international standards and classification societies.

Integrating harmonic analysis into the simulation model allows for the rapid identification of potential closeness to distortion limits in the system design. This analysis also aids in the evaluation of various solutions to reduce harmonic distortion.

Alewijnse provides on-board power quality measurements to assess and validate distortion levels in any power system, along with effective methods and solutions to minimize these distortions.

CLIENT BENEFITS

- Improved design quality and reduced technical risks
- Validation of component selection through load flow and short-circuit studies
- Verification of protection and coordination system



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Our goal is to co-create value with and for our customers and partners. We aim to develop and improve electrification and automation solutions which are innovative, sustainable and of the highest quality. We focus on making a valuable contribution to successful projects in the maritime and industrial sectors.

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