

## Introduction to Power Quality

### Presentation and Discussion

- Typical Power Quality Electrical Measurements  
*The main fundamental parameters that should be considered in a power quality survey and how these relate to potential problems and issues on an installation.*
- Harmonics Introduction – Including types of loads & effects  
*What are harmonics and how does an old installation compare with a new modern installation. What are the typical effects caused by modern loads and how they could impact on a sites power quality and energy profile.*
- ISO50001 – Brief Overview with specific focus on the Energy Planning section including Monitoring, Measuring and Analysis  
*Introduced in 2011 this international standard is aimed at helping companies develop and implement an energy policy and improve its energy performance. We will take a look at some of the key points of the standard with specific focus on the requirement to monitor the installation as part of the “Plan – Do – Check – Act” improvement framework.*
- EN50160 – European Standard  
*This is the power quality standard that has been defined and now used across Europe. We will look at how the standard defines limits and characteristics that must be met by the electricity supplier and how they can potentially impact the customers installation. We will also take a look at how some companies still refer to the older G5/4 electrical guidelines to quantify a sites power quality.*
- Solutions – What is Power Factor Correction & Voltage Optimisation  
*Once information is recorded and a sites installation has been assessed, various solutions to improve the power quality and available. Here we will look at how they work and their viability on today's electrical installations.*

### Practical

- Setup of Power Quality Analysers  
*Hands on demonstration of a selection of Power Quality Analysers and Energy Loggers to show the capabilities of the equipment in relation to the topics and measurements introduced in the main presentation.*
- Download of results  
*Putting the results into the products software and ways to present the data to the end user and how to focus on the key information.*
- Interpretation of Results/Case Study examples  
*A look at some example real world surveys and discussion on what they show.*