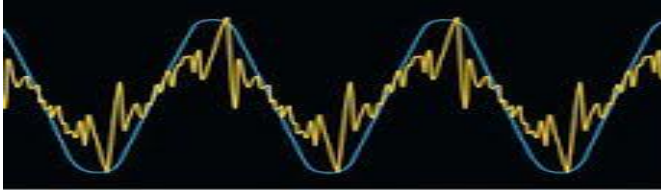


## POWER QUALITY

Power Quality in any electrical supply network can vary significantly for a number of reasons. This variance in supply can affect the operation of your electrical equipment and in turn cause disruptions to your whole process.



### VOLTAGE & LOAD BALANCE

A common issue within a number of installations is the uneven distribution of load across the phases. Whether it is due to a lack of initial engineering or uncontrolled additions, this imbalance can be a route cause of unnecessary stress on the network and distributed loads. It can also negate any power efficiency improvements that would normally improve use.

### VOLTAGE DISTORTION

Voltage Distortion can manifest itself on the supply wave in many ways:

- From the Incoming Voltage Supply
  - Spikes, Dips & Swells
- Resulting from Surges
  - Sudden changes in demand
  - Swelling at different points
  - Operating Range Fluctuations
- Nuisance Tripping
- Overload/Temperature

All changes in supply can reduce equipment life and dramatically affect the operation and the efficiency of any network.



### POWER FACTOR

Understanding your plant's power factor, will allow you to:

- Ensure you meet the Power Supply Authority requirements.
- Allow for maximum utilisation of electrical equipment.
- Determine the economic benefits of power factor correction against reduced utility charges and increased system capacity.

### HARMONICS

Knowledge of the voltage and current harmonic distortion at any point in your power system, will allow you to:

- Ensure you meet the Power Authority harmonic distortion requirements.
- Ensure harmonic heating does not overload your electrical equipment.
- Determine the benefits of the appropriate harmonic filters to mitigate any problems.

### HOW CAN WELCON ASSIST?

- Capture data from specialised power analysers installed at key plant locations.
- Analyse power factor and harmonic problems using sophisticated software.
- Advise on the size and location of Power Factor Correction equipment
- Advise on the size and type of Harmonic Filtering equipment.
- Assist with the purchase and installation of the above equipment.

### BENEFITS TO YOU

By maximising the power quality of your electrical distribution system, you can achieve:

- Stable and reliable power supply
- Efficient use of electrical infrastructure
- Reduced plant downtime
- Optimised equipment lifespans

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