

powerstar



Voltage Optimisation

Optimising your incoming voltage to improve your power quality, reduce energy bills, and lower carbon emissions.

What is Voltage Optimisation?

Voltage Optimisation (VO) is a transformer-based technology which reduces the electricity used by your site by stabilising and reducing the incoming voltage.

The law in the UK and EU states that the mains supply voltage must be 230V +10%/-6%. So, while your incoming supply is expected to be 230V, the allowed voltage range means it can be anywhere from 216-253V.

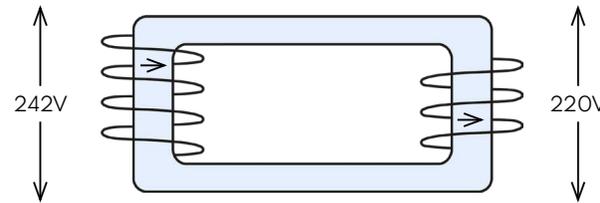
To ensure your supply voltage is always within this allowable range, the National Grid will typically supply higher than 230V on average, and it is almost always higher than the 220V at which most electrical equipment is rated to operate.

This means that your equipment is likely operating at a higher voltage than necessary. This wastes electricity, causes damage, and reduces the lifetime of the equipment. Voltage Optimisation stabilises and reduces your supply voltage, saving energy to reduce costs and carbon emissions, and prolonging the life of your electrical equipment.

Powerstar's equipment can operate at many different voltage levels, not just the typical 220V, including high voltages (HV). So if your requirements differ to those mentioned above, we still have you covered.

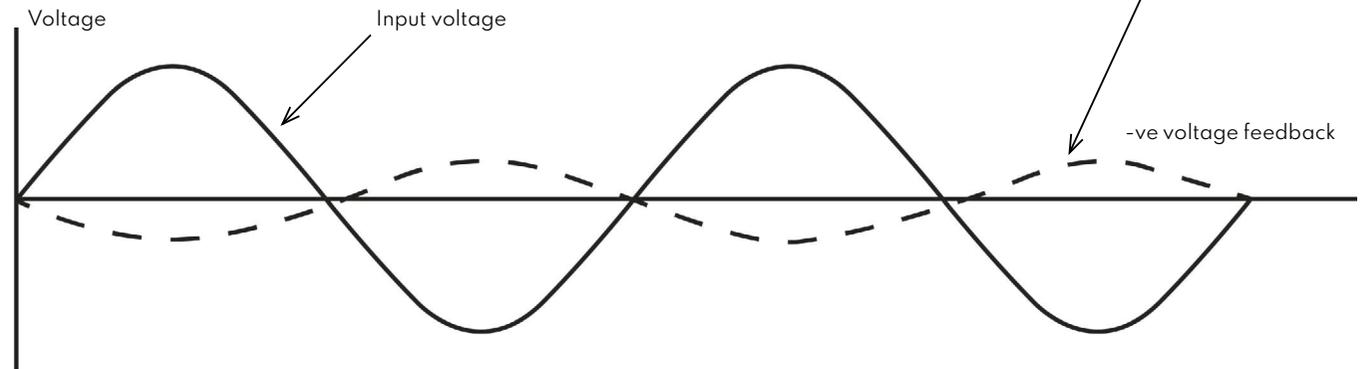
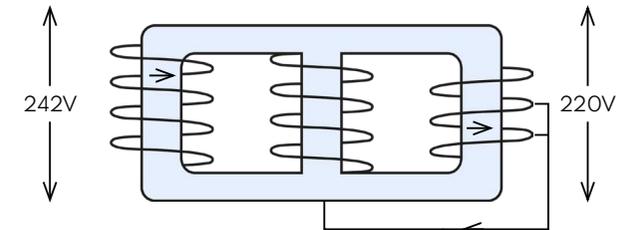
Traditional Voltage Optimisation

- The system transforms the entire power output from one voltage to another.
- The transformation is inefficient so a % of the entire energy is lost.
- Voltage is reduced but current increases.



Powerstar Patented Voltage Optimisation

- A 3rd winding creates a negative voltage to reach the target.
- Only the subtractive power is transformed, so the % losses are massively reduced.
- Voltage and current are reduced.
- The ability to switch off the third winding allows Powerstar to prove the savings.



Who is Voltage Optimisation Suitable for?

Sites that are being supplied with overvoltage will see the most benefit from Voltage Optimisation, but almost all sites will be able to secure savings via improved energy efficiency. Most infrastructure and equipment will operate more efficiently and with less need for maintenance at lower voltages.

Voltage Optimisation is best suited to environments where there is sensitive or critical electrical equipment, with long operating hours and a high level of electricity consumption. This means it performs well in sectors such as:

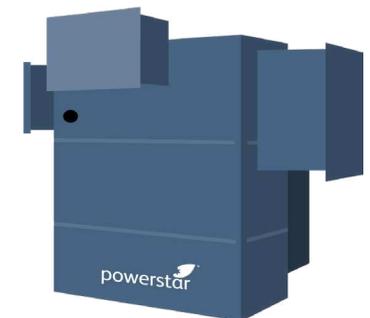
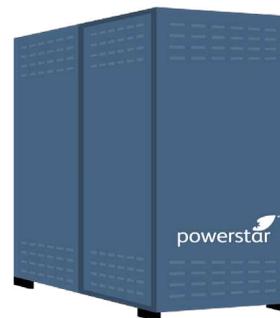
-  Manufacturing
-  Food and Drink
-  Retail and Leisure
-  Healthcare
-  Public Sector

The Powerstar Range

The Patented Powerstar Voltage Optimisation equipment is available in a broad range of sizes to meet all site requirements. The "LITE" version provides a fixed voltage reduction while the "MAX" version dynamically regulates the incoming site voltage to ensure that a target voltage level is always achieved. The system can be applied on either the Low Voltage (LV) or High Voltage (HV) installations of your site.



VO LITE	VO MAX	HV MAX
Fixed voltage Optimisation	Dynamic voltage Optimisation	Amorphous High Voltage (HV) transformer with dynamic voltage Optimisation
Subtracts a set voltage from incoming supply	Dynamically adjusts voltage subtraction to hit target value irrespective of incoming supply variations	Addition of a low-loss HV transformer to the unit allows maximum energy saving on HV supplies
	Online monitoring of performance	Online monitoring of performance
Small sites, saving dependent on supply	Best returns for most sites	Large sites with own HV transformers



Benefits to the Customer



Typical Energy Savings
6% to 10%



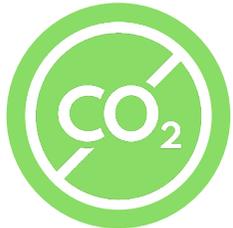
Bolster Sustainability Credentials



50 Year Lifespan



Online Proof of Savings



Reduced CO₂ Emissions



15 Year Warranty



- Finance options available
- Zero upfront cost
- Savings on your electricity bill from day one

Remote Monitoring

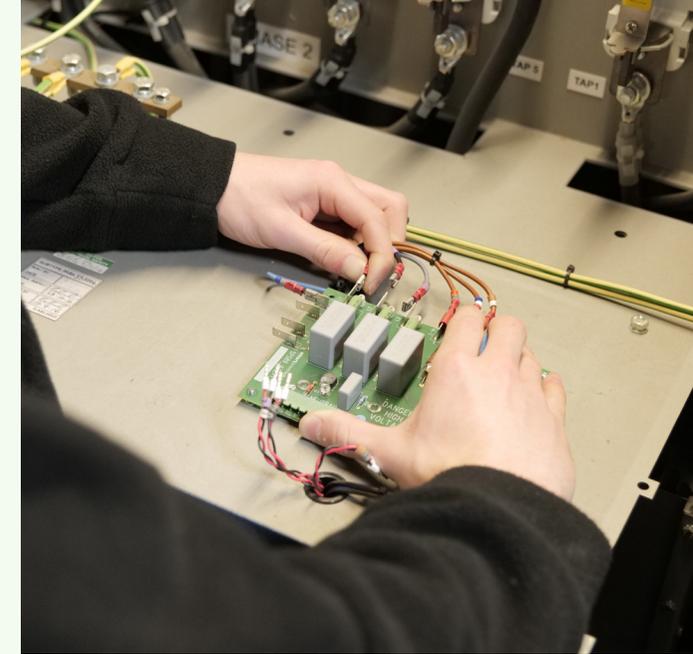
The Voltage Optimisation MAX system is supplied with remote online monitoring.

Real time performance:

- Remote monitoring of MAX units via cloud based platform
- Logging of site consumption, harmonics, power factor and voltage, stored on local secure FTP server, specifically for client and site
- Alarms are remotely recorded and stored, giving historic insights into asset performance
- Ability to perform remote updates and software upgrades
- Savings tests (on/off) can be tailored remotely and performed instantly as part of the verification
- Dedicated remote service team in place for continuous remote support
- Ability to troubleshoot remotely, removing the need for majority of site visits

Why Powerstar?

Powerstar is the leading Voltage Optimisation provider that **designs and manufactures its products in the UK**. From design and testing, through to commissioning, installation and aftercare, Powerstar supports you to ensure your chosen energy solution delivers exactly what you need from it. We have been trusted to implement thousands of Voltage Optimisation units across the globe for a variety of organisations, from manufacturing companies, hotels, gyms and supermarket chains to clients with critical services such as the police, fire brigade, the NHS, government departments, local authorities, education facilities, and SMEs across a range of industries.



Our Customers

Powerstar have installed 6000 units installed around the world



Our Credentials



Get in Touch

To find out how Powerstar can help you achieve your energy management goals, contact us using the details below:

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