POWER FOR THE NEXT GENERATION

SECURITY OF SUPPLY WITH PROTECTION AGAINST VOLTAGE DIPS & HIKES + ENERGY SAVINGS

Benefits of choosing a Wilson e2+

- ✔ Buck and boost to safeguard against voltage hikes and drops
- ✔ Measure, monitor and control via remote connectivity
- ✔ Improved site resilience
- ✔ Energy savings through reduced transformers losses
- ✔ Maximised energy savings from voltage dependent loads
- ✔ Proven and robust technology
- ✔ Incorporating components from world leading manufacturer
- ✔ Equipment engineered for performance and reliability

WILSON
e2+AMORPHOUS

Improved site resilience - maximised energy savings

Are you ready to deal with today's supply voltage challenges and make the most from associated energy saving opportunities?

Our Wilson e2+ super low loss amorphous transformer is now available with a 17 position on load tap changer that provides regulated supply voltage to site via an AVR relay.

The result: Buck and boost functionality protects your site from voltage hikes and drops whilst you maximise energy savings through reduced transformer losses and dynamic voltage management.

Distribution transformer of the future: Meet the Wilson e2+

The Wilson e2+ is a type of voltage regulated distribution transformer (VRDT) that uses tried and tested on-load tap changer technology.

We partnered with Maschinenfabrik Rheinhausen (MR) to develop and tailor their world renowned technology specifically for distribution transformer applications. The result is an innovative distribution transformer product that addresses today's supply voltage challenges and associated energy savings opportunities.

FUTURE SAFE YOUR SITE

The e2+ is the **only** distribution transformer to
EXCEED TIER 2 EU ECO DESIGN SPECIFICATIONS COMING INTO FORCE 2021

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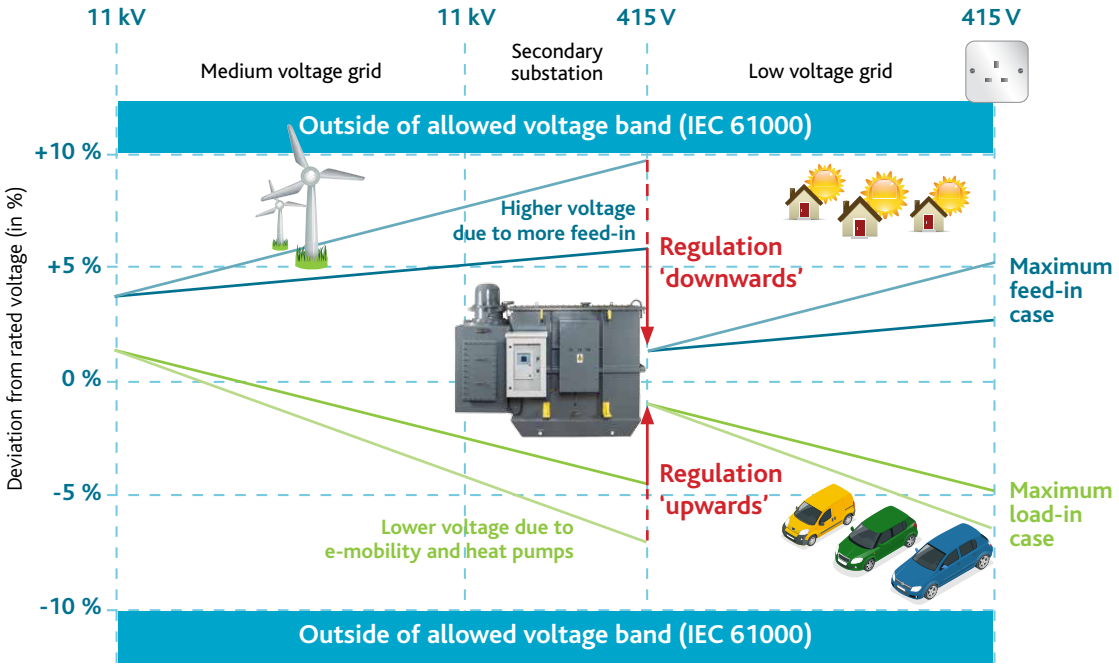
Voltage regulated distribution transformers

The growing importance of distributed renewables such as photovoltaics or wind power alongside a new set of loads from electric vehicles and heat pumps fundamentally changes the way our distribution networks operate: Electricity now has to flow bi-directional as opposed to the traditional one-way distribution from large power stations to industrial, commercial and household users.



On-load voltage control in modern distribution transformers is a cost effective alternative to traditional remedies for voltage band violations such as the deployment of additional cables. Due to additional benefits from reduced losses and the resulting economic attractiveness, the next generation of voltage regulated distribution transformers could therefore become a key component of our future "smart grids".

Is your site at risk from fluctuating supply voltage?

Supply voltage fluctuations are a common phenomenon across UK distribution networks.

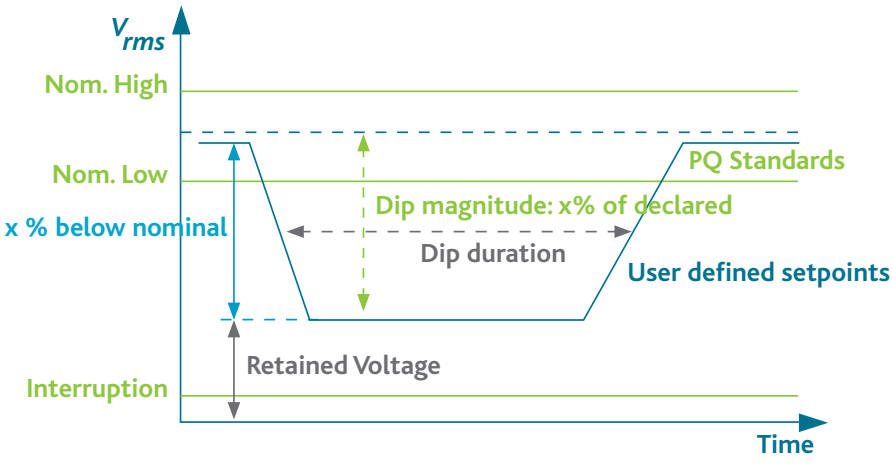
The most frequent of these are voltage fluctuations that occur as a result of changes in local day /night load profiles. These types of voltage fluctuation are usually regular and characterised by moderate amplitudes that can be accurately forecast and controlled.

However, with increasing amounts of embedded generation in particular from renewable sources the grid supply voltage can vary substantially as a result of varying operating conditions that are a lot harder to predict and control by national grid.

The extremes of these conditions are referred to as "heavy load without distributed infeed" and "light load with maximum distributed infeed." Voltages are considerably higher under high infeed conditions and reduced in cases of heavy loads.

Another type of voltage fluctuation occurs in form of sudden hikes and surges (increases in supply voltage) and dips (decreases in site voltage).

IMPACTS OF VOLTAGE DIPS ON POWER QUALITY PROBLEM



Power surges and hikes are commonly caused by lightening, power switching on the lines or sometimes from equipment drawing excessive amounts of power on your own site or neighbouring premises. Sudden voltage dips are typically caused by overloading on the network and load switching.

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Additional functions and benefits

- **Integrated protective functions:**
  - Undervoltage blocking and overvoltage blocking
  - Overvoltage detection with high-speed return
- **Digital inputs and outputs can be individually programmed on-site by the user**
- **Additional indicators using LEDs outside the display for freely selectable functions**
- **Display of all measured values such as voltage, current, active power, apparent power or reactive power, power factor (cos ϕ)**
- **Maximise energy savings from voltage dependent loads**
- **Further advanced features on request**

FAQ's

What is the response time of the Wilson e2+?

As per ENATS standard, the default out of bandwidth waiting time is 40 seconds with a second response (if required) triggered after 10 seconds (default setting). Where requested by the customer, the system can be configured to provide a shortened out of bandwidth waiting time.

What is the life expectancy of the OLTC?

The unit is guaranteed to provide a minimum of 50,000 mechanical operations after which time the OLTC insert and associated gear must be replaced. Over the 25 years product life of the Wilson e2+ transformer this equates to 2,000 operations per annum (5.5 operations /day).

What are the inspection/ maintenance requirements?

Under typical operating conditions the first inspection is due after 50,000 operations or after five years (whichever comes first).

Subsequent inspections should be carried out every four years (or 25,000 operations) without oil filter unit. Filtering the on-load tap-changer oil allows the inspection intervals to be extended to every seven years or 50,000 operations whichever comes first.

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FAQ's continued...

How is the Wilson e2+ output voltage regulated?

We have chosen the TAPCON® device by leading tap changer manufacturer Maschinenfabrik Rheinhausen (MR) to control the output voltage of the Wilson e2+ transformer.

The TAPCON® compares the transformer's measured voltage (Vactual) with a defined reference voltage (Vdesired). The difference between Vactual and Vdesired is the control deviation (dV). The TAPCON® parameters can be optimally adjusted to the line voltage response to achieve a balanced control response with a small number of tapchange operations.