Providing Solutions is our Strength

RPT Ruhstrat Power Technology GmbH

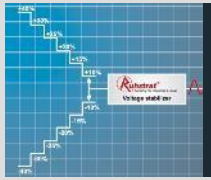
- NESSY – Network Stabilization System -

www.ruhstrat.com

Product Overview

Test Solutions

Temperature Rise Test Equipment , Turnkey Solutions for Heat Cycle Test, AC Power Source for Testing Motors and Pumps, Test Systems for Drive Industry, Test Systems with Variable Voltage, Current & Frequency, Inductive or Ohmic load units, RLC load



Voltage Optimization

Voltage Stabilisers, OLIVER - Online Voltage Regulation, EOS- Electric Online Stabilizer, NESSY – Network Stabilization System, DeltaVolt – Energy saving with voltage optimization, Harmonic filter

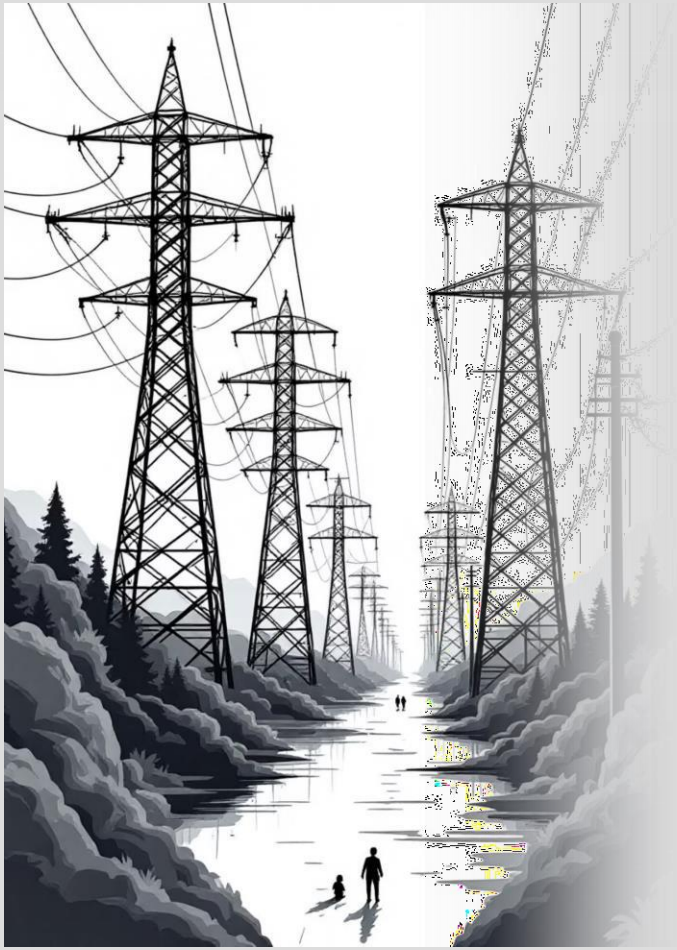
Transformers Reactors

VPI Transformers, Cast-resin Transformers, Variable transformers, Toroidal Core Transformers, High-Current Transformers, AC/DC Reactors,

Product Portfolio Voltage Optimization

Voltage Stabilizer	EOS – Electronic Online Stabilizer	OLIVER – Online Voltage Regulation	DeltaVolt – Energy saving with voltage optimization	NESSY - Network Stabilization System	Harmonic Filter
					
Voltage stabilization with variable transformers up to 2,000 kVA	Voltage stabilization in milliseconds up to 3,000 kVA	Compensation of voltage dips up to 2,400 kVA	Voltage stabilization at an electrically and economically optimal level	Voltage Maintenance in Distribution Grids	Filtering of harmonic / supra-harmonic stress distortions and resonances

NESSY – Network Stabilization System



Introduction to voltage regulation in the low-voltage grid

Voltage stabilization

Voltage regulators stabilize electrical voltages despite fluctuations in the grid and ensure a constant energy supply for all connected consumers.

Central component

In the low-voltage grid, string regulators are central components for voltage stabilization, which are integrated directly into the circuit.

Supply

The aim is to ensure security of supply and the protection of sensitive consumers through constant voltage, regardless of grid fluctuations.

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String regulators in Portugal: network structure and areas of application

High renewable feed-in

Portuguese distribution grid with intensive use of photovoltaics and wind power leads to voltage challenges

Rural areas

String regulators are mainly used in off-grid and rural regions for voltage stabilization

Peak load management

Local voltage fluctuations due to load peaks and variable feed-in power require active control

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- Stabilization of voltage deviations in local networks -> according to EN 50160 or IEC 60038
- Power Flow Control (Interconnected Networks)
- Low-voltage control as an economical alternative to line expansion
- Power 50 kVA to 630 kVA
- Voltage control range ±6%....±15% of U_N
- Response time 150 ms
- Phase-separated control
- Indoor and outdoor installation
- GSM/Ethernet communication

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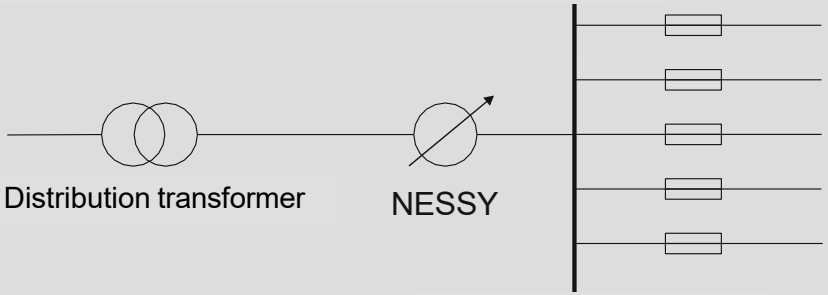
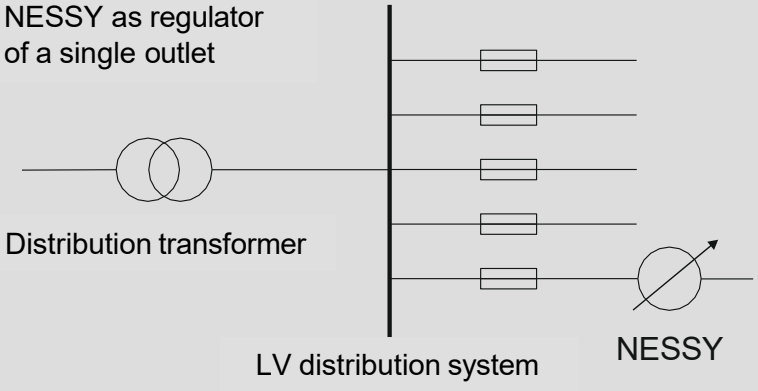
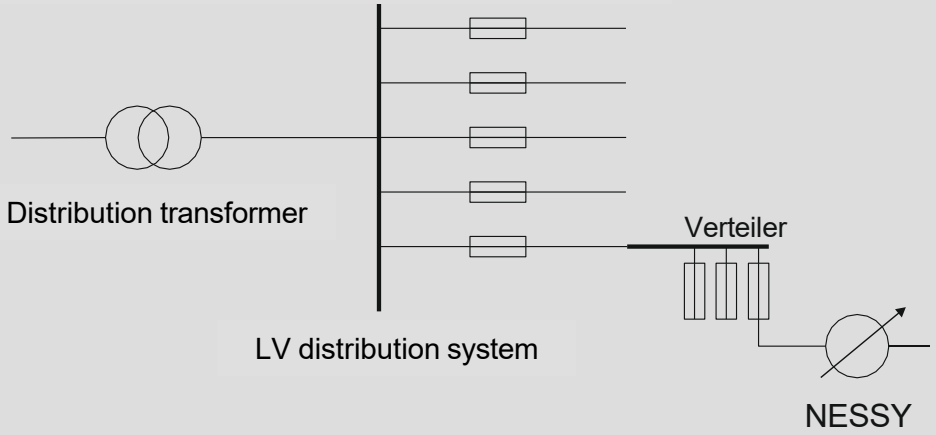
NESSY as regulator of local network



NESSY as regulator
of a single outlet



NESSY as string regulator



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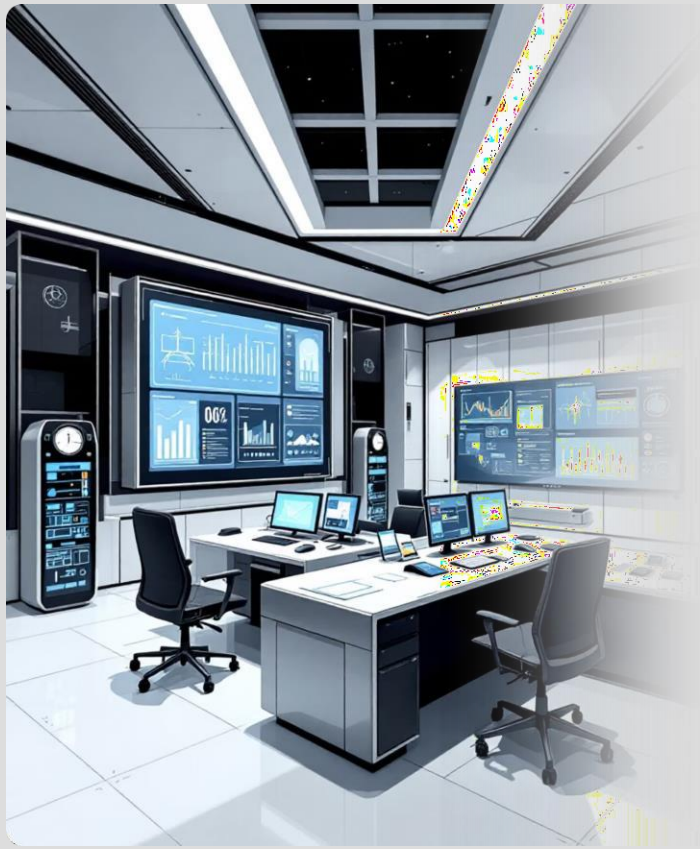

Technical functionality

1 **Voltage metering**

Continuous detection of tension on the string (subnet) by precise sensors

2 **Automatic control**

Adjustment of the voltage level by means of transformers with control stages or electronic components

3 **Smart-Grid-Integration**

Networking in intelligent grid systems for dynamic and coordinated grid control

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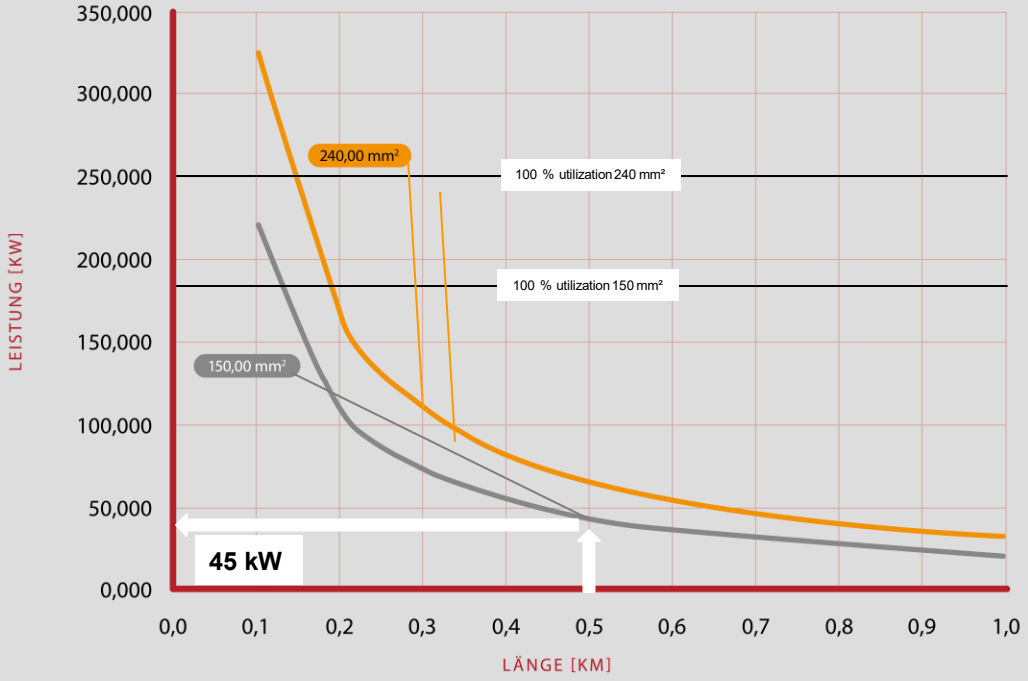
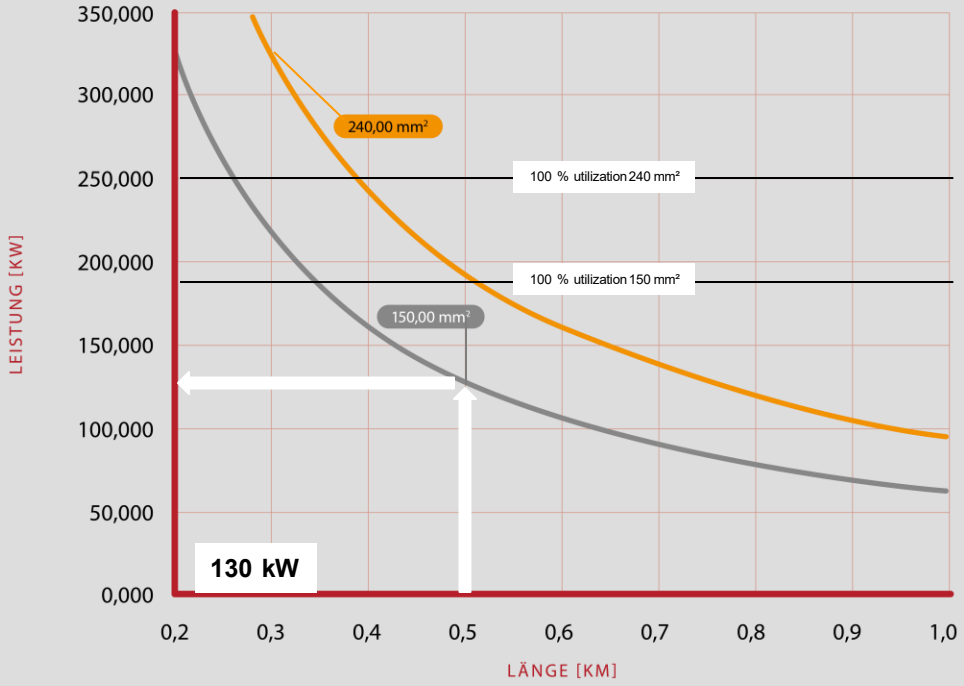
Performance increase in the distribution network

maximum permissible active power of selected cross-sections [mm²] depending on the cable length [Al conductor] with a permissible voltage drop of 3%



maximum permissible active power of selected cross-sections [mm²] depending on the cable length [Al conductor] with a permissible voltage drop of 9%



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Applications and reasons for use

- PV systems (capacity expansion)
- Electromobility (capacity expansion)
- Heat pumps (capacity expansion)
- Replacement of 1000 V connections (high power loss and maintenance costs)
- Dismantling of local network stations (rural exodus, lower loads, etc.)
- Reduction of network losses

References

Some of our content customers :

Thank you for your attention!