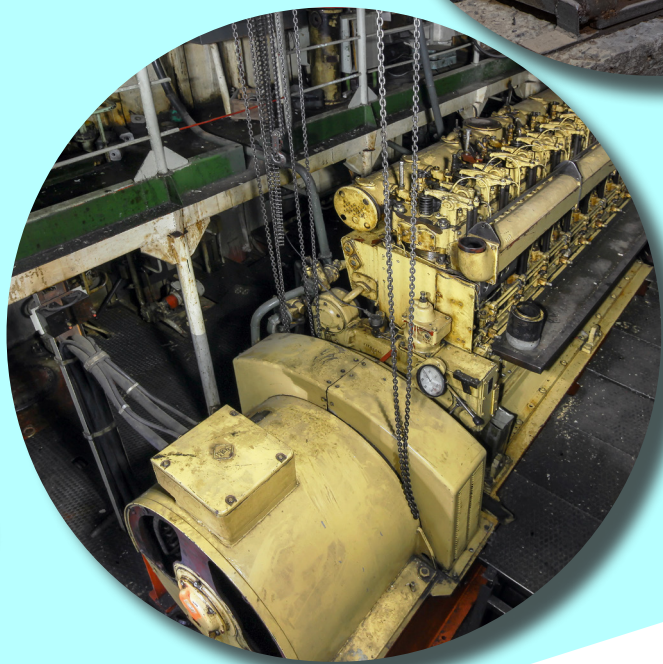
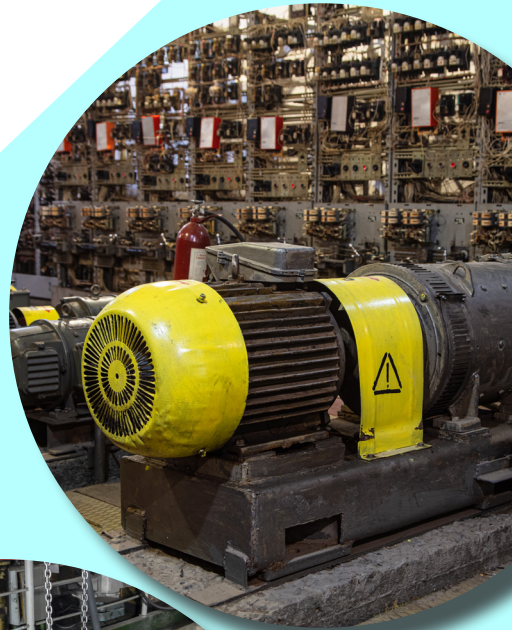


# Modernization of a Transformer Test Field



**HAEFELY**

Current and voltage – our passion

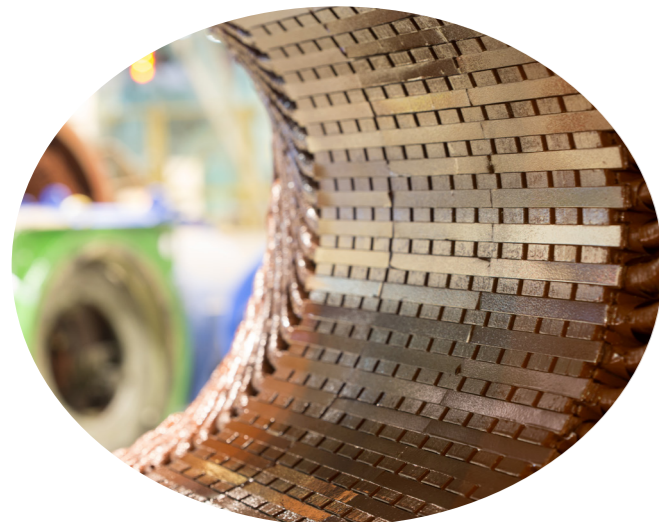


**MG SETS - AGED TECHNOLOGY**

Like light bulbs and cathode ray tubes, MG Sets have been in use for a very long time.

They were used in Elevators, in Street cars, Traction systems in the beginning and in the latter half of the last century used in industrial settings for frequency conversion and to separate grid noise.

Most other applications have completely done away with MG sets and have replaced them with Semi-Conductor devices. Many of the transformer factories which used MG sets 20-30 years ago are now seeing them decline in performance and are finding it hard to source spare parts or parts are exorbitantly expensive to replace.



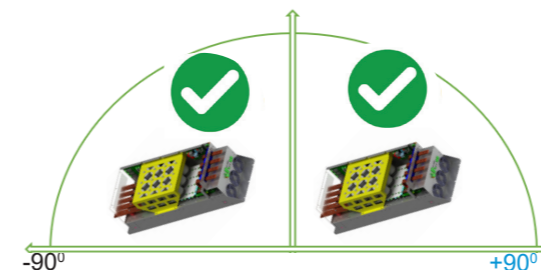
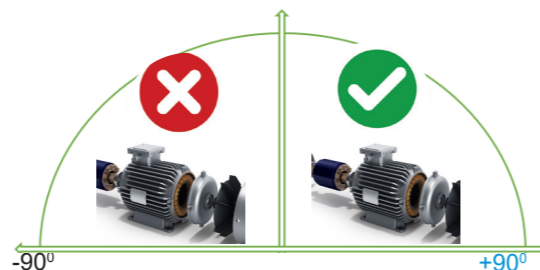
**PERCEIVED ADVANTAGES**

- Known technology.
- Simple components.
- Can withstand temporary overloads

**DEFINITE DISADVANTAGES**

- Huge and Heavy
- Difficult to transport
- Difficult to Install / maintain / replace
- Noisy
- Cannot increase in size
- Single frequencies
- Works best only in a limited Power Factor Range 0.95 Lead to .85 Lag

**High Power Test Mode**



**EPS - THEIR TIME HAS COME**

Static frequency converters have come of age in the past 20 years. IGBTs have become more powerful and cost of manufacture has come down drastically. SFCs ( and EPSs built around SFCs) bring a lot of advantages with them.

Flexibility, Modularity, Smoother control of voltage and frequency are only a few of the advantages. While these qualities are important in other industries, they are paramount in Transformer test sets.



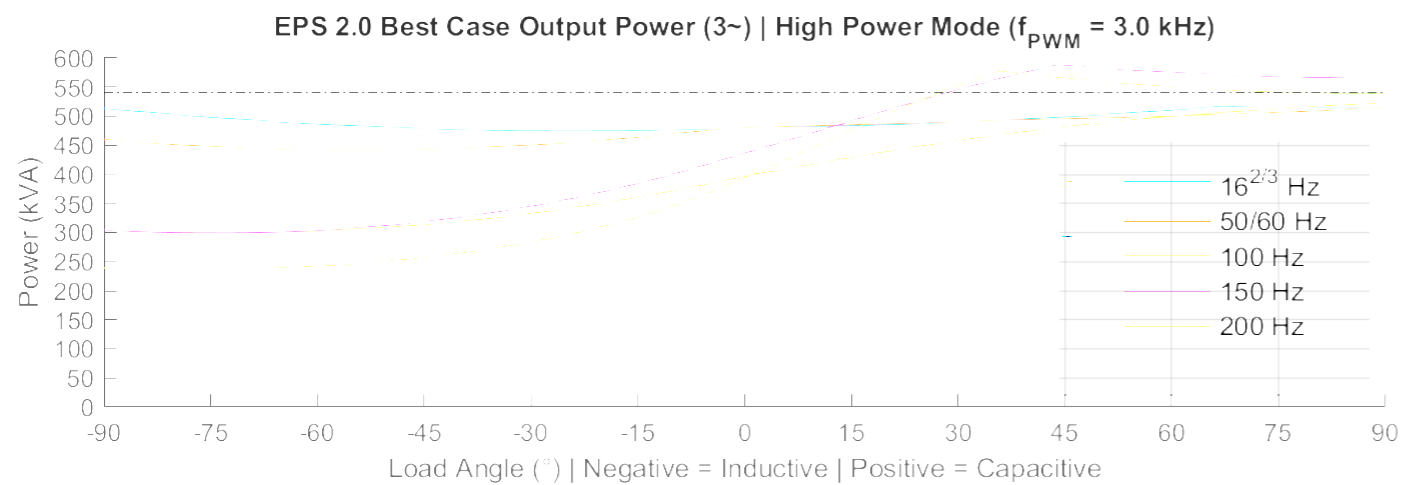
**PERCEIVED DISADVANTAGES**

- Younger technology
- Components are not robust
- Smaller thermal constant

**DEFINITE ADVANTAGES**

- Smaller foot print per kVA
- Standard components and IGBTs are easy to source
- Relatively quiet
- Modular. Planned upgrades possible
- Huge Frequency Bandwidth
- Works in full Power Factor Range 1 Lead ... 0 ... 1 Lag, hence can be half the size of the MG Set

**Low Power Test Mode**

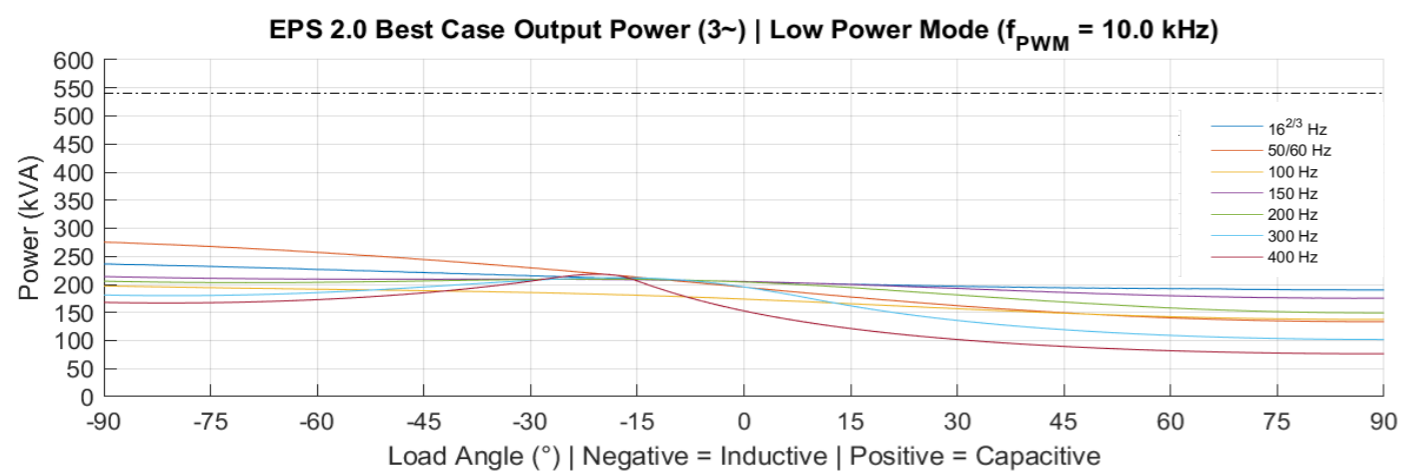


**POWER OUTPUT**

Haefely's EPSs are built around specially designed Static Frequency Converters (SFC) and are built fit for purpose out of commonly available components, whereas our competitors build theirs around commercially available SFCs.

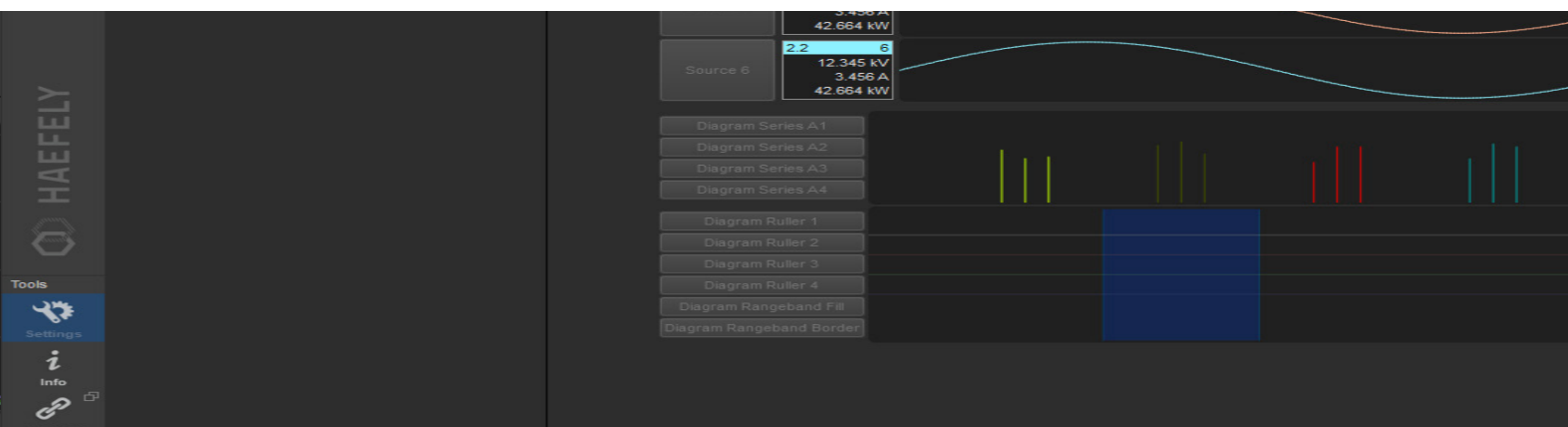
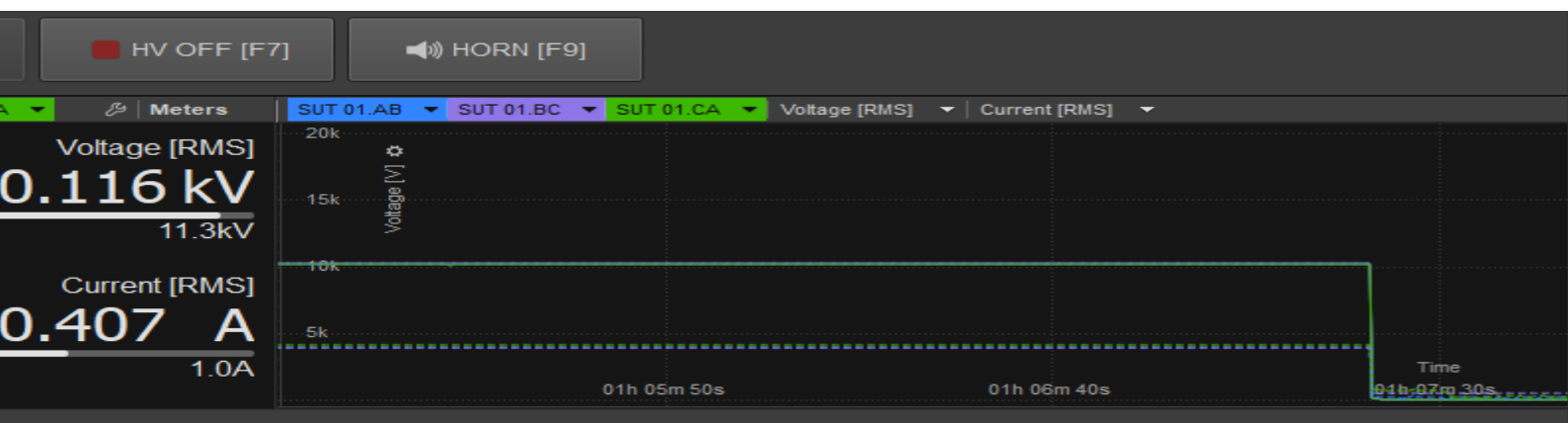
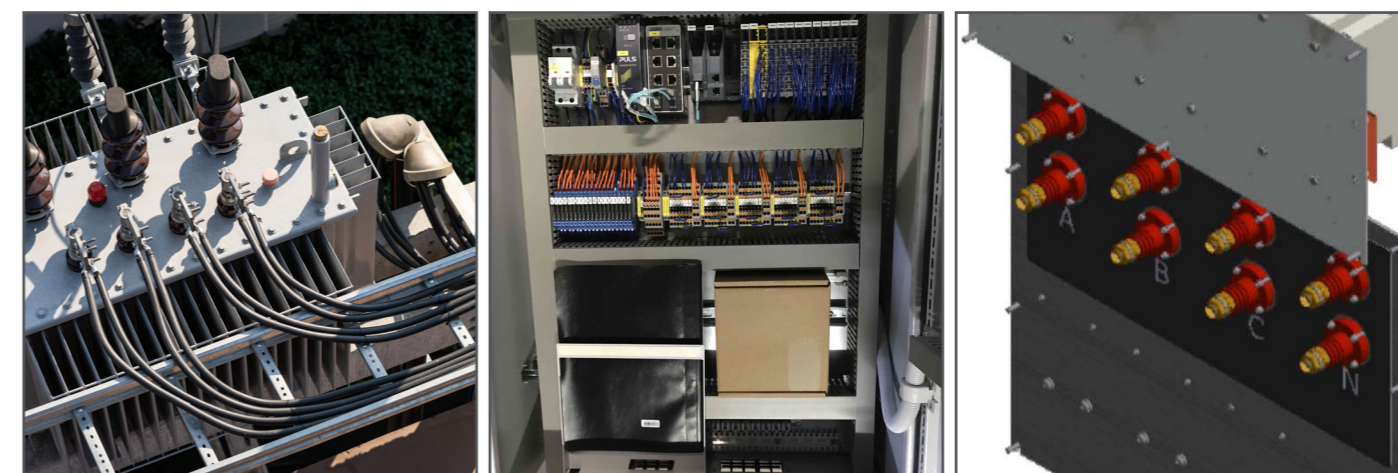
The special design brings with it several advantages. IGBT chopping frequencies are selectable. Choose High Power or Low Power mode as per test requirement.

- Inherently more **efficient** and has a higher **active power** output
- Excellent thermal design with fans in each cabinet and need **no external cooling**
- Can handle **higher peak currents** without special circuitry
- Practically a flat power output across **wide range of power factors**
- **THD and Symmetry** control by software is **automatic** and is NOT component dependent



| CONFIGURATION | O/P VOLTAGE -V | O/P CURRENT -A | NOMINAL kVA* |
|---------------|----------------|----------------|--------------|
| EPS 500       | 480            | 650            | 500          |
| EPS 1000      | 480            | 1300           | 1000         |
| EPS 1500      | 480            | 1950           | 1500         |
| EPS 2000      | 480            | 2600           | 2000         |
| EPS 2500      | 480            | 3250           | 2500         |
| EPS 3000      | 480            | 3900           | 3000         |
| EPS 3500      | 480            | 4550           | 3500         |
| EPS 4000      | 480            | 5200           | 4000         |

\* Refer graphs for more details. Values are for 50/60 Hz  
Higher power systems can be configured. Inquire with your sales contact



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This document has been drawn up with the utmost care. We cannot, however, guarantee that it is entirely complete, correct or up-to-date. Subject to change without notice. V.2022-04



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