1,300 mt p.a. CO$_2$ reduction

and energy efficiency with

to factory location
Background and Facts

The authority in Germany has increased the standard norm voltage from 22 V/ 380 V to 230 V / 400 V +/- 10% tolerance.

Within this tolerance every voltage between 207 V and 253 V for single phase alternating voltage and between 360 V and 440 V for AC per definition NORM VOLTAGE!
Reason:

The increased voltage shall stabilize net and the consumers, wherever they are, shall be supplied safely with norm voltage.

Consequently of the Tolerances:

<table>
<thead>
<tr>
<th>indicate rated voltage</th>
<th>area rated voltage</th>
<th>implicit standardized</th>
<th>Limits area of DIN VDE 0530/12.3</th>
</tr>
</thead>
<tbody>
<tr>
<td>fixed</td>
<td>add-on</td>
<td>range</td>
<td>Umin</td>
</tr>
<tr>
<td>400 V</td>
<td>-</td>
<td>-</td>
<td>± 5%</td>
</tr>
<tr>
<td></td>
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<td></td>
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</tr>
<tr>
<td>400 V</td>
<td>IEC 38</td>
<td>360 V ... 440 V</td>
<td>± 5%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>400 V</td>
<td>± 10%</td>
<td>360 V ... 440 V</td>
<td>± 5%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-</td>
<td>-</td>
<td>360 V ... 420 V</td>
<td>± 5%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The Producers of electronic parts and machines are obliged by law, only to produce products which are working safely within norm voltage (360V-440V bzw. 207 V – 253 V)
Funktion within the norm current

Too high voltage is dangerous for machines and computers as they produce high temperatures and this will have a negative effect to the life time of the machines. The eSaver is reducing the consumption as the voltage will be reduced. Non used voltage will be secured in a buffer as well as flicker will be secured in the special winding of magnetic field in our special transformer.

The eSaver is always operating in the norm voltage and can never go below the norm voltage requested by law.

The eSaver reduces the arbration of your machines, f.e. machines for production, engines, lightening, airconditioning, elevators. The life expectancy of your machines will increase.

We optimise the voltage within the tolerances of the norm voltage. The working condition and operation of your machines will be kept same.
The potential saving is as follows:

- **40%**
  - Optimizing the Voltage within the tolerances (Norm Voltage between 230/400 Volt ± 10%)
  - All machines are running same within the tolerances of the Norm Voltage. (Less voltage means less current)

- **60%**
  - Buffering the system perturbation and Flicker
  - Inductereffect, spool as buffer
  - High Voltages are used from the magnetic field / winding.
  - Short and small Effect, but they commulate as they happen often.

**WE USE THE MILLISECONDS FOR YOUR SAVING**
Comparison Measurement

Installation of our 630 kVA / 912 A Measurement Trailer
Results of Measurement eSaver

Part of the measurement protocol:

• In switch off condition the incoming voltage was at L1 - L3 between 417 Volt - 424 Volt
• eSaver ® switched on level 2 (6%) the voltage within the factory was between 391 Volt to 398 Volt and in level 3 (8%) 385 Volt to 391 Volt.
• During the test we have been able to reduce in the levels 1-3 and we had a saving of 12,50% Saving in average.
• We recommend to install an eSaver with levels 2,3,4 (6%, 8% und 10 % reduction)
• If we use a eSaver with level 4 and can reduce the incoming Voltage by 10%, taking the results of the 8% Reduction with 12,5% savings as the basis, we have a factor of 1,5625.
• This Factor in level 4 (10% reduction) multiplied result to a saving of 15,63%.

For your company this has the following effect:

• 200.000€ energy cost p.m. / abt. 25-30.000€ p.m. saving
• 2.4 Mio.€ energy cost p.a. / abt.300-360.000€ p.a. saving
Example: Intersnack test reading Timeplots in the morning
Example: Intersnack  Timeplots in the morning
Example: Intersnack  Timeplots in the afternoon

eSaver on

eSaver off
Example: Intersnack  Timeplots in the afternoon
Example: **Installation**
Example: Installation
Example: **Installation**

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Example: Installation
```

![Diagram showing installation details with various components and labels such as "Saver", "800 kVA", and "Optional".]

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www.esaver.eu
Ideal for Industry, Production and Trade

- Production and industrial companies and wharfs
- Care dealer and service stations
- Agriculture companies
- Sewage treatment plants
- Supermarkets, Malls and Shops, Reefer plants
- Offices
- Hotels and restaurants
- Retirement Homes
- Bakery, Butchers and similar Producers
- Schools and Sport Halls
- Cities and Public Companies, Lightening, Swimming pools etc.

The eSaver is used everywhere, where a lot of current is needed!
Your benefit

- saving cost for energy, sustained yield
- solid technic
- 10 years guarantee *
- reliable
- works without creating problems
- simple installation
- short amortisation ROI between 1.5 – 5 years
- ROI increases with every increase of price of current
- quality **German** product - from one source
- liquidity can be increased from the beginning

* of the transformer
Active help for the nature “Save Current!”

*Every saved kWh reduces the CO₂*

The eSaver are produced according to the following international standards Norm:

- DIN EN 60439-1/4
- Zertifikat und CE –
- DIN VDE 0100-410
- DIN EN 61000-5-7
- DIN EN 61800-2
- DIN EN 61800-3
- BGV A3
- certified by TÜV, possible

The eSaver has a very high efficiency and saves a lot of current. Therefore the eSaver is a real climate protection.