EUROTECH
DIGITAL POWER ENGINEERING

Smart Stabilizer Power Module 20/08/2017

About speed

Four transformers with primary voltages of 230V are selected at zero crossings moments in the sinewave. This prevents harmonics; the output sinewave is as the input sinewave.

Secondary transformer voltages of 2.8, 5.6, 11.2 and 24.4V add or subtract a correction voltage of up to 42V. This creates 31 different voltages being 2.8V apart.

Input-output voltage sampling and the possible change of transformer selection occur in intervals. Intervals are 640msec or 320msec are for standard transformers; the effect of transformer inrush currents is still low when the input voltage changes from one extreme to the other.

Example:

When the input voltage suddenly changes from extreme low to extreme high, a change from add to subtract is needed.

The last half positive sinewave has left a residual flux in the transformers.
The next half sinewave, with transformers connected in the opposite direction, is positive again.
The magnetic flux in the transformers saturate and causes the inrush current.

With intervals of 640msec, standard transformers can be used. Inrush is not a serious problem.
With 320msec, transformer losses due to inrush are higher but may still be acceptable.

Especially designed transformers reduce or eliminate inrush currents.

In larger stabilizers or when a higher speed is wanted (160msec intervals), inrush-reduced or inrush-free transformers are required.

We will assist you specifying these optimized transformers.