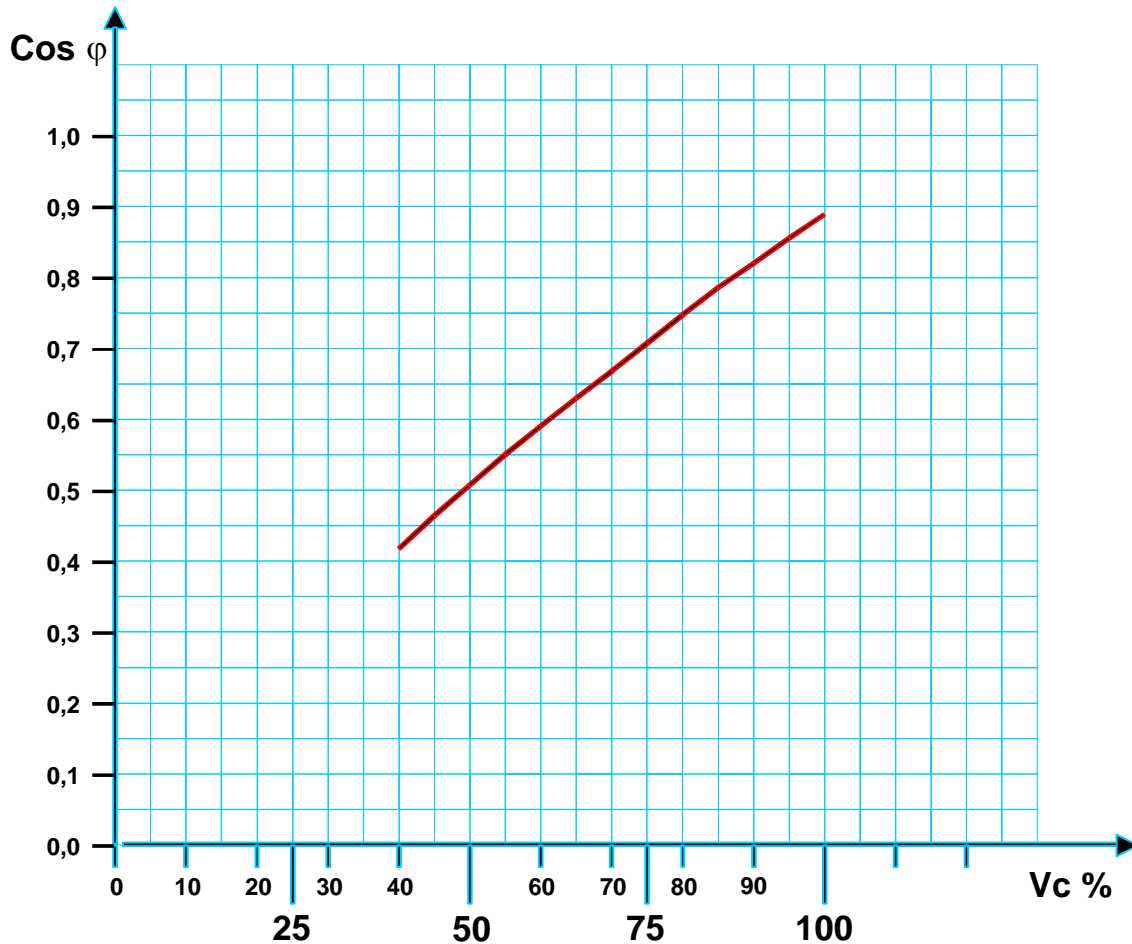


## APPROX. DIAGRAM OF THE POWER FACTOR ( $\cos\phi$ ) AGAINST THE OUTPUT D.C. VOLTAGE BY A.C./D.C. SCR CONVERTER

The power factor doesn't depend on the output current but on the output dc voltage only



### Power factor correction

The capacitors for the power factor correction must be chosen properly, due to **the current (voltage) harmonics** supplied by the ac/dc converters, that can give cause for:

- **high current value** flowing through the capacitors
- dangerous **resonance effect**, that can damage some electronic components.

Keeping in mind what above it must be properly considered what follows:

- a) the capacitors must withstand a **max voltage 30%** approx. higher in comparison with the network voltage.

Sometimes proper inductors are series connected with the capacitors in order to limit the current flowing through the capacitors.

- b) In any case the capacitors set **must not be placed close to the converter**, in order to avoid dangerous resonance effect that could damage some electronic components.
- c) Finally, as regards the design of the reactive power of the capacitor set the **average power factor** of the plant must be considered.

Only one capacitor set, provided with automatic control, can be provided in order to obtain the maximum power factor value.

**IN ORDER TO AVOID DANGEROUS RESONANCE EFFECT THE CAPACITORS MUST NOT BE CONNECTED CLOSE TO THE CONVERTER**