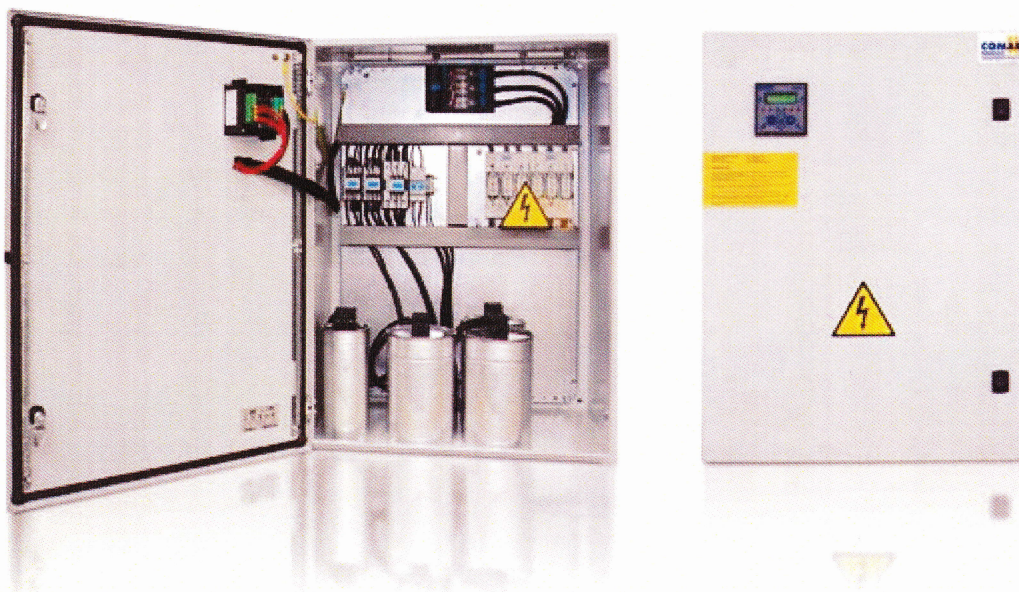


CAPACITOR BANKS

CONNECTING DIRECTIVES



Protection Device

Dimensioning of the protection device of a capacitor bank :

The nominal current of the capacitor bank will be calculated as follows :

$$I_{nom} = \frac{kVar \times 1000}{U_{nom} \times \sqrt{3}}$$

This current must be multiplied with following coefficients :

$$I_{protection} = I_{nom} \times 1,1 \times 1,3$$

1,1 : to take account of the deviations in the network voltage.

1,3 : to take account of the extra currents due to harmonics.

So :

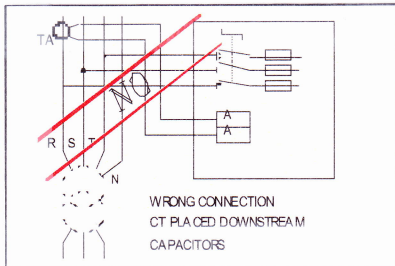
$$I_{protection} = I_{nom} \times 1,43$$

Positioning of the current transformer

Most of the PF controllers measure according the following principle :

Measurement of the voltage between 2 phases (between L2 and L3) and measurement of the current in the other phase (L1).

In the following diagrams we give good and bad examples.

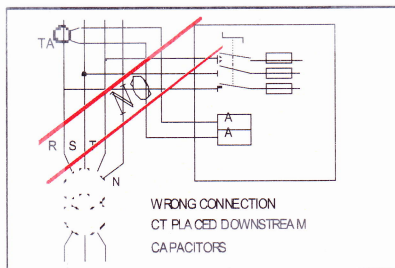


1 fault :

- The CT measures only the capacitor bank and not the total load.

The steps remain not switched on.

When a step is switched on, the PF controller will measure a capacitive load and switches off the steps.



1 fault :

- The CT measures the load but not the capacitor bank.

All steps will be switched on.

The PF controller measures no changes in the power factor when the steps of the capacitor bank are switched on.

You can switch on as many steps you will, the measurement values (via CT) will not change.