

## Individual PFC for Transformers

Standard values for transformer power factor correction		
Rated apparent power of transformer kVA	Rated capacitor power for oil immersed transformers kvar	Rated capacitor power for cast resin transformers kvar
10	1.0	1.5
20	2.0	1.7
50	4.0	2.0
75	5.0	2.5
100	5.0	2.5
160	7.0	4.0
200	7.5	5.0
250	8.0	7.5
315	10.0	8.0
400	12.5	8.5
500	15.0	10.0
630	17.5	12.5
800	20.0	15.0
1000	25.0	16.7
1250	30.0	20.0
1600	35.0	22.0
2000	40.0	25.0
2500	50.0	35.0
3150	60.0	50.0

For an exact calculation of the right capacitor value, following formula can be used:

$$Q_C = 1\% \cdot \frac{A_N}{100}$$

$Q_C$  = needed capacitor (kvar)

1% = magnetising current of the transformer (AS%)

$A_N$  = apparent rated power of the transformer in kVA

There are regional differences in the guidelines of power suppliers concerning the admissible size of capacitors directly connected with a transformer. Therefore a consultation with the respective power supplier is recommended before installation of a compensation bank. Modern transformers have laminations which only need low capacity to reverse the magnetism. In case the capacitor output is too high, stress increase may occur during idling.