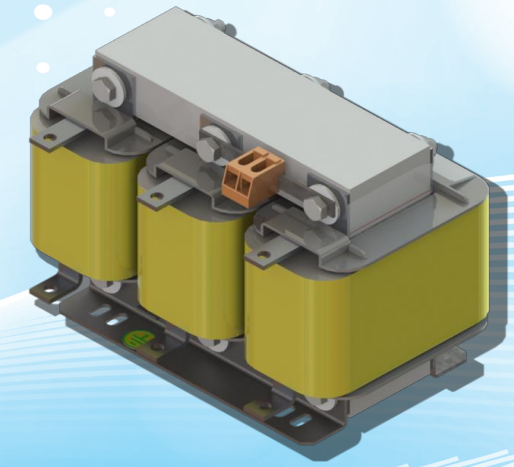
POWER FACTOR CORRECTION

PFC 50 Set - Capacitor + Reactor

Power		Capacitor	#	Detuning Reactor	#
Q_{LC} [kvar]	Q_C [kvar]	Type	(pc)	Type	(pc)
U_N = 400 V	**U_C = 400 V**	**f=50 Hz**			
25	25	CSADG 4-0,4/25	1	-	-
U_N = 400 V	**U_C = 440 V**	**f=50 Hz**	**p = 7 %**	**(189Hz)**	
25	28,1	CSADG 4-0,44/28,1	1	TKA1-28,1-189/400/440	1
50	56,2	CSADG 4-0,44/28,1	2	TKA1-56,2-189/400/440	1
U_N = 400 V	**U_C = 480 V**	**f=50 Hz**	**p = 14 % (134Hz)**		
25	31	CSADG 4-0,48/31	1	TKA1-31-134/400/480	1
50	62	CSADG 4-0,48/31	2	TKA1-62-134/400/480	1



Q_{LC} **Rated power of the detuned system** (capacitor + reactor).

Q_C **Rated power of the capacitor.**

U_N **Rated voltage** - rms value of AC sine wave of the line voltage (mains).

U_C **Capacitor voltage** - rms value of required voltage of the capacitor. The reactor causes increase of the mains voltage at capacitor.

$$U_C = \frac{U_N}{1 - \frac{p}{100\%}}$$

p **Detuning factor** - ratio of reactor inductance and capacitor capacitance reactances.

$$p = \frac{X_L}{X_C} \cdot 100\%$$

f_r **Series resonance frequency** - between reactor and capacitor.

$$f_r = f_N \cdot \sqrt{\frac{100\%}{p}}$$