



TeSys D contactors for capacitor switching

Why compensate for reactive energy?

- 1- To reduce your electricity bills by eliminating charges for excess reactive energy consumed. This consumption is generated by various types of load: transformers, motors, air-conditioning units, ballasts, etc.
- 2- To improve the quality of the energy provided by certain mains supplies.

How to compensate for reactive energy?

By using capacitor-based power factor correction equipment.

How does this impact power switching?

Capacitor switching is accompanied by transient phenomena resulting from the capacitor load, which generate very high transient currents. TeSys D contactors for capacitor switching are specially designed to commute and limit such current peaks at energizing.



Benefits

Opt for energy savings and quality

- Reduce your electricity bills
- Control the quality of your energy

Opt for simplicity: no more calculations needed

- Contactor rated in kVAR
- Sized to absorb current peaks
- Optimized number of sales references
- Common accessories with the TeSys D contactor range

Opt for efficiency

- 300,000 switching operations guaranteed
- Shorter installation time
- Smaller overall size due to the compact design of TeSys D contactors

Characteristics

The impedance of any electrical circuit has both an inductive and a resistive component. Capacitors, together with such circuits, form oscillatory circuits which can, when switched on, give rise to high transient currents ($> 180 I_n$) at high frequencies (about 15 kHz).

As a general rule, the peak current at energizing is lower when:

- Mains inductances are high
- Line transformer ratings are low
- The transformer short-circuit voltage is high
- The ratio between the sum of the ratings of the capacitors already switched into the circuit and that of the capacitors to be switched in is small (for multiple-step capacitor banks).

In practice, the current peak is often incompatible with the characteristics of standard-technology contactors.

It is therefore necessary:

- Either to limit this current peak by increasing the inductance of the mains supply by inserting choke inductors and by calculating the size of the standard contactor to be used.
- Or to use special contactors (early make poles, high pressure at the poles, contact materials, etc.).

TeSys LC1 D•K contactors have been specially designed for switching 3-phase, single- or multiple-step capacitor banks. They are compliant with the IEC 60947-4-1 standard, according to AC-6b utilization category, and are UL, CSA and CCC certified.

These products provide a ready-to-use solution.

Selection guide

Contactors	LC1D	F	K	B7
Operating power as per IEC 60947-4-1 AC-6b at 400V, 50/60Hz, T<60°C	13 kVAR	F		
	16 kVAR	G		
	20 kVAR	L		
	25 kVAR	M		
	30 kVAR	P		
	40 kVAR	T		
Capacitor switching AC Coil voltage, 50/60Hz	63 kVAR	W*		
	24V		K	B7
	48V			E7
	110V			F7
	120V			G7
	220V			M7
	230V			P7
	240V			U7
	380V			Q7
	400V			V7
415V			N7	
440V			R7	



TeSys LC1DFK
TeSys LC1DGK



TeSys LC1DPK
TeSys LC1DTK

* Complete suffix in this case being WK12**

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