

TeSys contactors

For switching 3-phase capacitor banks,
used for power factor correction,
Direct connection without choke inductors

Special contactors

Special contactors LC1 D ●K are designed for switching 3-phase, single or multiple-step capacitor banks; they conform to standards IEC 60070 and 60831, NFC 54-100, VDE 0560, UL and CSA.

Contactors applications

Specification

Contactors fitted with a block of early make poles and damping resistors, limiting the value of the current on closing to 60 In max.

This current limitation increases the life of all the components of the installation, in particular that of the fuses and capacitors.

The patented design of the add-on block (n° 90 119-20) ensures safety and long life of the installation.

Operating conditions

There is no need to use choke inductors for either single or multiple-step capacitor banks.

Short-circuit protection must be provided by gl type fuses rated at 1.7...2 In.

Maximum operational power

The power values given in the selection table below are for the following operating conditions:

Prospective peak current at switch-on	LC1 D ●K	200 In
Maximum operating rate	LC1 DFK, DGK, DLK, DMK, DPK	240 operating cycles/hour
	LC1 DTK, DWK	100 operating cycles/hour
Electrical durability at nominal load	All contactor ratings	400 V 300 000 operating cycles 690 V 200 000 operating cycles

Operational power at 50/60 Hz (1) θ ≤ 55 °C (2)			Instantaneous auxiliary contacts		Tightening torque on cable end	Basic reference, to be completed by adding the voltage code (3)	Weight
220 V	400 V	660 V	N/O	N/C	N.m		kg
kVAR	kVAR	kVAR					
6.7	12.5	18	1	1	1.2	LC1 DFK11 ●●	0.430
			–	2	1.2	LC1 DFK02 ●●	0.430
8.5	16.7	24	1	1	1.7	LC1 DGK11 ●●	0.450
			–	2	1.7	LC1 DGK02 ●●	0.450
10	20	30	1	1	1.9	LC1 DLK11 ●●	0.600
			–	2	1.9	LC1 DLK02 ●●	0.600
15	25	36	1	1	2.5	LC1 DMK11 ●●	0.630
			–	2	2.5	LC1 DMK02 ●●	0.630
20	33.3	48	1	2	5	LC1 DPK12 ●●	1.300
25	40	58	1	2	5	LC1 DTK12 ●●	1.300
40	60	92	1	2	9	LC1 DWK12 ●●	1.650

Switching of multiple-step capacitor banks (with equal or different power ratings)

The correct contactor for each step is selected from the above table, according to the power rating of the step to be switched.

Example: 50 kVAR 3-step capacitor bank. Temperature: 50 °C and U = 400 V or 440 V.

One 25 kVAR step: contactor LC1 DMK, one 15 kVAR step: contactor LC1 DGK, and one 10 kVAR step: contactor LC1 DFK.

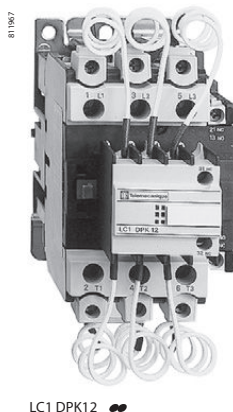
(1) Operational power of the contactor according to the scheme on the page opposite.

(2) The average temperature over a 24-hour period, in accordance with standards IEC 60070 and 60831 is 45 °C.

(3) Standard control circuit voltages (for other voltages, please consult your Regional Sales Office):

Volts	24	42	48	110	115	220	230	240	380	400	415	440
50/60 Hz	B7	D7	E7	F7	FE7	M7	P7	U7	Q7	V7	N7	R7

For other voltages between 24 and 440 V, please consult your Regional Sales Office



Instructions de câblage
WIRING INSTRUCTION
INSTRUCCIÓN DE CABLEADO

Français

Lors de la mise sous tension des condensateurs, le contacteur subit d'importantes contraintes électromagnétiques. Il est donc impératif de respecter les règles de raccordements suivantes :

- Couple de serrage tel que spécifié sur l'étiquette en face avant.
- Mise en place d'embouts de câblage.
- Serrage des connecteurs 1 mois après fonctionnement effectif des contacteurs et ensuite 1 fois par an.
- Manipuler les fils des résistances avec précaution pour éviter des amorces de rupture au niveau des cosses serties.

ENGLISH

DURING CAPACITOR SWITCH-ON, THE CONTACTOR IS SUBJECTED TO SEVERE ELECTROMAGNETIC STRESSES. IT IS THEREFORE ESSENTIAL TO OBSERVE THE FOLLOWING RULES FOR CABLING:

- TIGHTENING TORQUES CONFORMING TO THAT SPECIFIED ON THE LABEL ON THE FRONT OF THE PRODUCT.
- USE OF CABLE ENDS.
- RETIGHTENING OF THE CONNECTORS 1 MONTH AFTER EFFECTIVE OPERATION OF THE CONTACTORS, THEN ONCE A YEAR.
- HANDLE THE RESISTOR WIRES CAREFULLY TO AVOID CREATING THE STARTING POINT OF A FRACTURE AT THE CRIMPED TAGS.

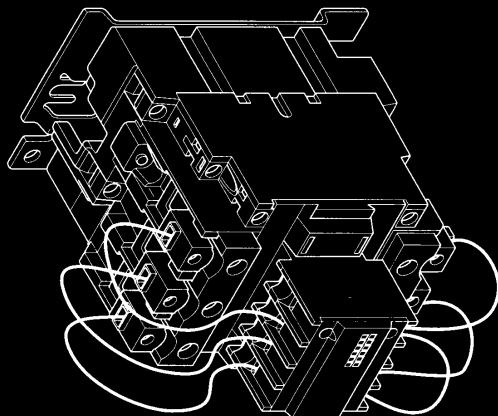
ESPAÑOL

A LA PUESTA EN TENSION DE LOS CAPACITORES, EL CONTACTOR SE SOMETE A IMPORTANTES ESFUERZOS ELECTROMAGNETICOS. ES ENTONCES IMPERATIVO RESPETAR LAS REGLAS DE CABLEADO SIGUIENTES :

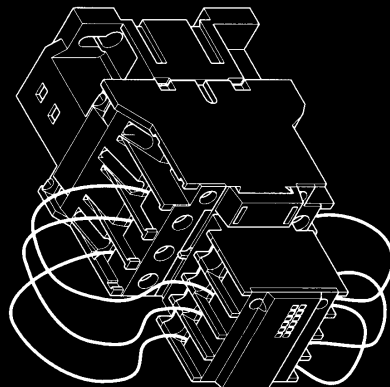
- AJUSTAR EL PAR DE APRIETE TAL COMO SE INDICA EN LA ETIQUETA FRONTAL DEL CONTACTOR.
- UTILIZACIÓN IMPERATIVA DE TERMINALES DE CABLEADO.
- REAPRIETE DE LOS CONECTORES 1 MES DESPUES DEL FUNCIONAMIENTO EFECTIVO DEL CONTACTOR, POSTERIORMENTE REPETIR LA OPERACION 1 VEZ POR AÑO.
- MANIPULAR LOS HILOS DE LAS RESISTENCIAS CON PRECAUCIÓN PARA EVITAR ASI FISURA A NIVEL DE LAS TERMINALES.

LC1-D•K

Contacteurs pour commande de condensateurs triphasés
CONTACTORS FOR SWITCHING THREE-PHASE CAPACITORS
CONTACTORES PARA CONTROL DE CAPACITORES TRIFÁSICOS



LC1-DPK 12
LC1-DTK 12
LC1-DWK 12

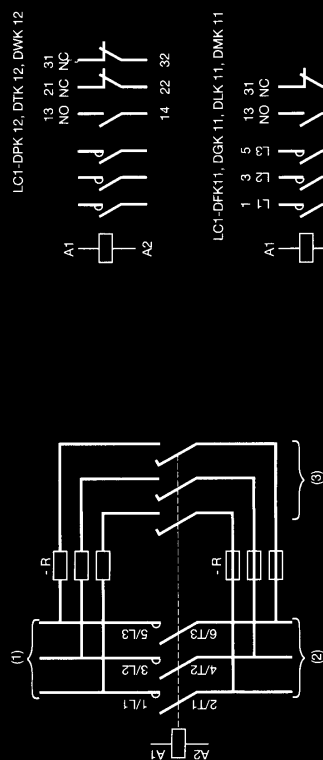


LC1-DFK 11
LC1-DGK 11
LC1-DLK 02
LC1-DGK 02



W9 1498727 01 11

Schémas, Raccordement WIRING DIAGRAMS, CABLING ESQUEMAS, CABLEADO



R : Connexions résistances câblées par nos soins
(1) : Résistor
(2) : Utilisation
(3) : Ne rien raccorder sur ces 3 pôles auxiliaires

R : RESISTOR CONNECTIONS PRE-WIRED BY TELEMECANIQUE

(1) LA RED
(2) UTILIZACION
(3) NO CONECTAR NADA SOBRE LOS POLOS AUXILIARES

R : EL CABLEADO DE LAS RESISTENCIAS ESTA HECHO DESDE FABRICA

(1) LA RED
(2) UTILIZACION
(3) NO CONECTAR NADA SOBRE LOS POLOS AUXILIARES

Raccordement CABLING CONEXIONADO

	[mm ²]	[mm ²]	[mm ²]	[mm ²]	[mm ²]	[mm ²]	[N.m]	[N.m]	[N.m]
LC1-DPK	2,5	1,5	4	4	4	4	1,2		
LC1-DGK	4	2,5	6	6	6	6	1,7		
LC1-DLK	4	4	10	6	6	6	1,85		
LC1-DMK	6	4	16	10	10	10	2,5		
LC1-DPK	16	6	25	16	16	16		5	
LC1-DTK	16	6	25	16	16	16		5	
LC1-DWK	50	25	50	35	35	35		9	

Philips N° 2
Ø 6...Ø 8

AWG 16 = 1,31 mm²
AWG 14 = 2,08 mm²
AWG 12 = 3,31 mm²
AWG 10 = 5,26 mm²
AWG 8 = 8,37 mm²
AWG 5 = 13,3 mm²
AWG 4 = 21,15 mm²
AWG 3 = 26,67 mm²
AWG 2 = 33,62 mm²
AWG 1 = 42,41 mm²
AWG 1/0 = 53,49 mm²

