TeSys contactors
TeSys D contactors

Applications		**All types of control system**					
							
Rated operational current	Ie max AC-3 (Ue ≤ 440 V)	9 A	12 A	18 A	25 A	32 A	38 A
	Ie AC-1 (θ ≤ 60 °C)	20/25 A		25/32 A	25/40 A	50 A	
Rated operational voltage		690 V on ∿ and ⎓					
Number of poles		3 or 4	3 or 4	3 or 4	3 or 4	3	
Rated operational power in AC-3	220/240 V	2.2 kW	3 kW	4 kW	5.5 kW	7.5 kW	9 kW
	380/400 V	4 kW	5.5 kW	7.5 kW	11 kW	15 kW	18.5 kW
	415/440 V	4 kW	5.5 kW	9 kW	11 kW	15 kW	18.5 kW
	500 V	5.5 kW	7.5 kW	10 kW	15 kW	18.5 kW	18.5 kW
	660/690 V	5.5 kW	7.5 kW	10 kW	15 kW	18.5 kW	18.5 kW
	1000 V	–	–	–	–	–	–
Auxiliary contacts		1 N/C and 1 N/O instantaneous incorporated in the contactors, with add-on blocks common to the whole range comprising up to 4 N/C or N/O instantaneous, up to 1 N/O + 1 N/C time delay and up to 2 N/O or 2 N/C protected contacts and 2 screen continuity terminals.					
Thermal overload relays manual-auto compatible	Class 10 A	0.10…10 A	0.10…13 A	0.10…18 A	0.10…32 A	0.10…38 A	0.10…38 A
	Class 20	2.5…10 A	2.5…13 A	2.5…18 A	2.5…32 A		
Suppressor modules (⎓ and low consumption contactors are fitted with a built-in bidirectional peak limiting diode suppressor as standard)	Varistor	•	•	•	•	•	•
	Diode	–	–	–	–	–	–
	RC circuit	•	•	•	•	•	•
	Bidirectional peak limiting diode	•	•	•	•	•	•
Interfaces	Relay output	•	•	•	•	•	•
	Relay interface with manual override switch	•	•	•	•	•	•
	Solid state	•	•	•	•	•	•
Contactor type references	∿ or ⎓ 3 pole	LC1 D09	LC1 D12	LC1 D18	LC1 D25	LC1 D32	LC1 D38
	∿ 4 pole	LC1 DT20/ LC1 D098	LC1 DT25/ LC1 D128	LC1 DT32/ LC1 D188	LC1 DT40/ LC1 D258	–	–
	⎓ 4 pole					–	–
Reversing contactor type references	∿ 3 pole	LC2 D09	LC2 D12	LC2 D18	LC2 D25	LC2 D32	LC2 D38
	⎓ 3 pole	LC2 D09	LC2 D12	LC2 D18	LC2 D25	LC2 D32	LC2 D38
	∿ 4 pole	LC2 DT20	LC2 DT25	LC2 DT32	LC2 DT40	–	–
	⎓ 4 pole	LC2 DT20	LC2 DT25	LC2 DT32	LC2 DT40	–	–
Pages	Contactors	24501/2 to 24502/5					
	Reversing contactors	24503/2 to 24510/3					

TeSys contactors
TeSys D contactors

Applications													
													
Rated operational current	Ie max AC-3 (Ue ≤ 440 V)	40 A		50 A		65 A		80 A		95 A		115 A	150 A
	Ie AC-1 (θ ≤ 60 °C)	60 A		80 A				125 A				200 A	
Rated operational voltage		690 V ∼ or ⎓						1000 V on ∼ supply, 690 V on ⎓ supply					
Number of poles		3	4	3		3	4	3	4	3		3	4	3
Rated operational power in AC-3	220/240 V	11 kW		15 kW		18.5 kW		22 kW		25 kW		30 kW	40 kW
	380/400 V	18.5 kW		22 kW		30 kW		37 kW		45 kW		55 kW	75 kW
	415/440 V	22 kW		25/30 kW		37 kW		45 kW		45 kW		59 kW	80 kW
	500 V	22 kW		30 kW		37 kW		55 kW		55 kW		75 kW	90 kW
	660/690 V	30 kW		33 kW		37 kW		45 kW		45 kW		80 kW	100 kW
	1000 V	–		–		–		45 kW		45 kW		75 kW	90 kW
Auxiliary contacts		1 N/C and 1 N/O instantaneous incorporated in the contactors, with add-on blocks common to the whole range comprising up to 4 N/C or N/O instantaneous, up to 1 N/O + 1 N/C time delay and up to 2 N/O or 2 N/C protected contacts and 2 screen continuity terminals.											
Thermal overload relays manual-auto compatible	Class 10 A	13...40 A		13...50 A		13...65 A		17...104 A		17...104 A		60...150 A	60...150 A
	Class 20	13...40 A		13...50 A		13...65 A		17...80 A				60...150 A	60...150 A
Suppressor modules (⎓ and low consumption contactors are fitted with a built-in bidirectional peak limiting diode suppressor as standard)	Varistor	•	•	•		•	•	•	•	•		•	•	–
	Diode	•	•	•		•	•	•	•	•		–	–	–
	RC circuit	•	•	•		•	•	•	•	•		•	•	•
	Bidirectional peak limiting diode	•	•	•		•	•	•	•	•		–	–	–
Interfaces	Relay output	•	•	•		•	•	•	•	•		•	•	•
	Relay interface with manual override switch	•	•	•		•	•	•	•	•		•	•	•
	Solid state	•	•	•		•	•	•	•	•		•	•	–
Contactor type references	∼ or ⎓ 3 pole	LC1 D40A		LC1 D50A		LC1 D65A		LC1 D80		LC1 D95		LC1 D115	LC1 D150
	∼ 4 pole	LC1 DT60A		–		LC1 DT80A		LC1 D80		–		LC1 D115	–
	⎓ 4 pole	LC1 DT60A		–		LC1 DT80A		LC1 D80		–		LC1 D115	–
Reversing contactor type references	∼ 3 pole	LC2 D40A		LC2 D50A		LC2 D65A		LC2 D80		LC2 D95		LC2 D115	LC2 D150
	⎓ 3 pole	LC2 D40A		LC2 D50A		LC2 D65A		–		–		–	–
	∼ 4 pole	–		–		–		LC2 D80		–		LC2 D115	–
	⎓ 4 pole	–		–		–		–		–		–	–
Pages	Contactors	24501/2 to 24502/5											
	Reversing contactors	24503/2 to 24510/3											

TeSys contactors
For utilisation category AC-1

Maximum operational current (open-mounted device)

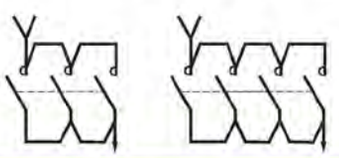
Contactor size			LC1/ LP1 K09	LC1/ LP1 K12	LC1 D09	LC1 DT20	LC1 D12 DT25	LC1 D18 DT32	LC1 D25 DT40	LC1 D32	LC1 D38	LC1 D40A DT60A
Maximum operating rate in operating cycles/hour			600	600	600	600	600	600	600	600	600	600
Connection conforming to IEC 60947-1	Cable c.s.a.	mm²	4	4	4	4	4	6	6	10	10	35
	Bar c.s.a.	mm	–	–	–	–	–	–	–	–	–	–
Operational current in AC-1 in A, according to the ambient temperature conforming to IEC 60947-1	≤ 40 °C	A	20	20	25	20	25	32	40	50	50	60
	≤ 60 °C	A	20	20	25	20	25	32	40	50	50	60
	≤ 70 °C	A (at UC)	*(1)*	*(1)*	17	*(1)*	17	22	28	35	35	42
Maximum operational power ≤ 60 °C	220/230 V	kW	8	8	9	8	9	11	14	18	18	21
	240 V	kW	8	8	9	8	9	12	15	19	19	23
	380/400 V	kW	14	14	15	14	15	20	25	31	31	37
	415 V	kW	14	14	17	14	17	21	27	34	34	41
	440 V	kW	15	15	18	15	18	23	29	36	36	43
	500 V	kW	17	17	20	17	20	23	33	41	41	49
	660/690 V	kW	22	22	27	22	27	34	43	54	54	65
	1000 V	kW	–	–	–	–	–	–	–	–	–	–

(1) Please consult your Regional Sales Office.

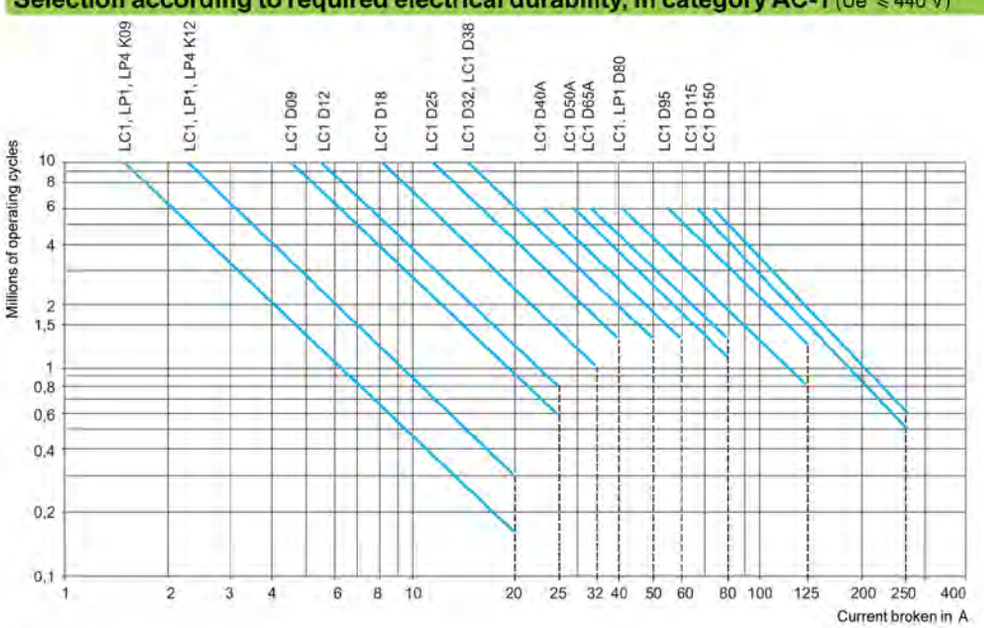
Increase in operational current by parallel connection of poles

Apply the following coefficients to the currents or power values given above; these coefficients take into account an often unbalanced current distribution between the poles:

- 2 poles in parallel: K = 1.6
- 3 poles in parallel: K = 2.25
- 4 poles in parallel: K = 2.8



Selection according to required electrical durability, in category AC-1 (Ue ≤ 440 V)



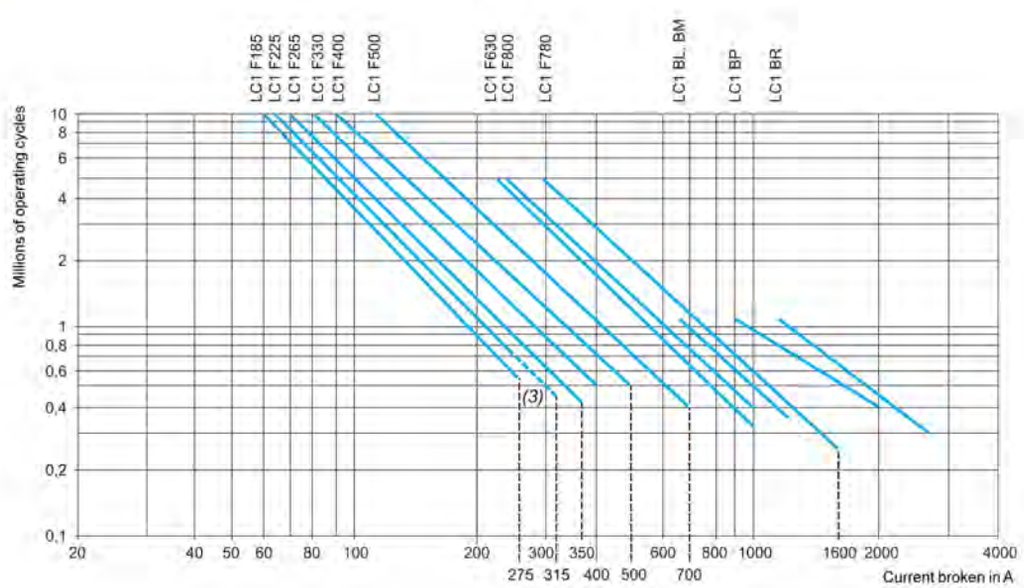
Control of resistive circuits (cos φ ≥ 0.95).
The current broken (Ic) in category AC-1 is equal to the current (Ie) normally drawn by the load.

Example:

- Ue = 220 V - Ie = 50 A θ ≤ 40 °C - Ic = Ie = 50 A.
- 2 million operating cycles required.
- The above selection curves show the contactor rating needed: either LC1 or LP1 D50.

LC1 D50A	LC1 D65A DT80A	LC1/ LP1 D80	LC1 D95	LC1 D115	LC1 D150	LC1 F185	LC1 F225	LC1 F265	LC1 F330	LC1 F400	LC1 F500	LC1 F630	LC1 F780	LC1 F800	LC1 F1700	LC1 F2100	LC1 BL	LC1 BM	LC1 BP	LC1 BR
600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	200	200	120	120	120	120
35	35	50	50	120	120	150	185	185	240	–	–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	–	–	–	–	2 30 x 5	2 40 x 5	2 60 x 5	2 100 x 5	2 60 x 5	3 100 x 5	4 100 5	2 50 x 5	2 80 x 5	2 100 x 5	2 100 x 1
80	80	125	125	250	250	275	315	350	400	500	700	1000	1600	1000	1700	2100 *(2)*	800	1250	2000	2750
80	80	125	125	200	200	275	280	300	360	430	580	850	1350	850	1450	1750	700	1100	1750	2400
56	56	80	80	160	160	180	200	250	290	340	500	700	1100	700	–	–	600	900	1500	2000
29	29	45	45	80	80	90	100	120	145	170	240	350	550	350	570	700	300	425	700	1000
31	31	49	49	83	83	100	110	125	160	180	255	370	570	370	600	780	330	450	800	1100
50	50	78	78	135	135	165	175	210	250	300	430	600	950	600	1000	1200	500	800	1200	1600
54	54	85	85	140	140	170	185	220	260	310	445	630	1000	630	1050	1300	525	825	1250	1700
58	58	90	90	150	150	180	200	230	290	330	470	670	1050	670	1100	1350	550	850	1400	2000
65	65	102	102	170	170	200	220	270	320	380	660	750	1200	750	1250	1550	600	900	1500	2100
80	80	135	135	235	235	280	300	370	400	530	740	1000	1650	1000	1700	2100	800	1100	1900	2700
–	–	120	120	345	345	410	450	540	640	760	950	1500	2400	1500	2500	3100	1100	1700	3000	4200

(2) With set of right-angled connectors ***LA9 F2100****.*



Example:

- Ue = 220 V - Ie = 500 A - $\theta \leq 40$ °C - Ic = Ie = 500 A.
- 2 million operating cycles required.
- The above selection curves show the contactor rating needed: LC1 F780.

(3) The dotted lines are only applicable to ***LC1 F225****.*

TeSys contactors

TeSys D contactors for motor control up to 75 kW at 400 V, in category AC-3

For connection by screw clamp terminals and lugs

LC1 D09●●

LC1 D25●●

LC1 D65A●●

LC1 D95●●

LC1 D115●●

3-pole contactors

Standard power ratings of 3-phase motors 50-60 Hz in category AC-3 (θ ≤ 60 °C)							Rated operational current in AC-3 440 V up to	Instantaneous auxiliary contacts		Basic reference, to be completed by adding the control voltage code (2)	Weight (3)
220 V 230 V	380 V 400 V	415 V	440 V	500 V	660 V 690 V	1000 V				Fixing (1)	
kW	kW	kW	kW	kW	kW	kW	A				kg
Connection by screw clamp terminals											
2.2	4	4	4	5.5	5.5	–	9	1	1	LC1 D09●●	0.320
3	5.5	5.5	5.5	7.5	7.5	–	12	1	1	LC1 D12●●	0.325
4	7.5	9	9	10	10	–	18	1	1	LC1 D18●●	0.330
5.5	11	11	11	15	15	–	25	1	1	LC1 D25●●	0.370
7.5	15	15	15	18.5	18.5	–	32	1	1	LC1 D32●●	0.375
9	18.5	18.5	18.5	18.5	18.5	–	38	1	1	LC1 D38●●	0.380
Power connections by EverLink® BTR screw connectors (4) and control by spring terminals											
11	18.5	22	22	22	30	–	40	1	1	LC1 D40A●● (5)	0.850
15	22	25	30	30	33	–	50	1	1	LC1 D50A●● (5)	0.855
18.5	30	37	37	37	37	–	65	1	1	LC1 D65A●● (5)	0.860
Connection by screw clamp terminals or connectors											
22	37	45	45	55	45	45	80	1	1	LC1 D80●●	1.590
25	45	45	45	55	45	45	95	1	1	LC1 D95●●	1.610
30	55	59	59	75	80	65	115	1	1	LC1 D115●●	2.500
40	75	80	80	90	100	75	150	1	1	LC1 D150●●	2.500

Connection by lugs or bars

In the references selected above, insert a figure **6** before the voltage code.
Example: **LC1 D09●●** becomes **LC1 D096●●**.

Separate components

Auxiliary contact blocks and add-on modules: see pages 24511/2 to 24511/9.

(1) LC1 D09 to D65A: clip-on mounting on 35 mm ⊔ rail AM1 DP or screw fixing.
LC1 D80 to D95 ∿: clip-on mounting on 35 mm ⊔ rail AM1 DP or 75 mm ⊔ rail AM1 DL or screw fixing.
LC1 D80 to D95 ⎓: clip-on mounting on 75 mm ⊔ rail AM1 DL or screw fixing.
LC1 D115 and D150: clip-on mounting on 2 x 35 mm ⊔ rails AM1 DP or screw fixing.
(2) Standard control circuit voltages (for other voltages, please consult your Regional Sales Office):

a.c. supply													
Volts	**24**	**42**	**48**	**110**	**115**	**220**	**230**	**240**	**380**	**400**	**415**	**440**	**500**
LC1 D09…D150 (D115 and D150 coils with built-in suppression as standard, by bi-directional peak limiting diode).													
50/60 Hz	B7	D7	E7	F7	FE7	M7	P7	U7	Q7	V7	N7	R7	S7
LC1 D80…D115													
50 Hz	B5	D5	E5	F5	FE5	M5	P5	U5	Q5	V5	N5	R5	S5
60 Hz	B6	–	E6	F6	–	M6	–	U6	Q6	–	–	R6	–

d.c. supply											
Volts	**12**	**24**	**36**	**48**	**60**	**72**	**110**	**125**	**220**	**250**	**440**
LC1 D09…D65A (coils with integral suppression device fitted as standard)											
U 0.75…1.25 Uc	JD	BD	CD	ED	ND	SD	FD	GD	MD	UD	RD
LC1 D80…D95											
U 0.85…1.1 Uc	JD	BD	CD	ED	ND	SD	FD	GD	MD	UD	RD
U 0.75…1.2 Uc	JW	BW	CW	EW	–	SW	FW	–	MW	–	–
LC1 D115 and D150 (coils with integral suppression device fitted as standard)											
U 0.75…1.2 Uc	–	BD	–	ED	ND	SD	FD	GD	MD	UD	RD

Low consumption								
Volts ⎓	**5**	**12**	**20**	**24**	**48**	**110**	**220**	**250**
LC1 D09…D38 (coils with integral suppression device fitted as standard)								
U 0.8…1.25 Uc	AL	JL	ZL	BL	EL	FL	ML	UL

For other voltages between 5 and 690 V, see pages 24507/2 to 24507/7.
*(3) The weights indicated are for contactors with a.c. control circuit. For d.c. or low consumption control circuit, add 0.160 kg from **LC1 D09** to **D38**, 0.075 kg from **LC1 D40A** to **D65A** and 1 kg for **LC1 D80** and **D95**.*
*(4) BTR screws: hexagon socket head. In accordance with local electrical wiring regulations, a size 4 insulated Allen key must be used (reference **LAD ALLEN4**, see page 24511/9).*
*(5) For low consumption kit **LA4 DBL** (see page 24511/7).*

TeSys contactors
For utilisation category AC-3

Operational current and power conforming to IEC (θ ≤ 60 °C)

Contactor size			LC1/ LP1 K06	LC1/ LP1 K09	LC1 K12	LC1 K16	LC1 D09	LC1 D12	LC1 D18	LC1 D25	LC1 D32	LC1 D38	LC1 D40A
Maximum operational current in AC-3	≤ 440 V	A	6	9	12	16	9	12	18	25	32	38	40
Rated operational power P (standard motor power ratings)	220/240 V	kW	1.5	2.2	3	3	2.2	3	4	5.5	7.5	9	11
	380/400 V	kW	2.2	4	5.5	7.5	4	5.5	7.5	11	15	18.5	18.5
	415 V	kW	2.2	4	5.5	7.5	4	5.5	9	11	15	18.5	22
	440 V	kW	3	4	5.5	7.5	4	5.5	9	11	15	18.5	22
	500 V	kW	3	4	4	5.5	5.5	7.5	10	15	18.5	18.5	22
	660/690 V	kW	3	4	4	4	5.5	7.5	10	15	18.5	18.5	30
	1000 V	kW	–	–	–	–	–	–	–	–	–	–	–

Maximum operating rate in operating cycles/hour (1)

On-load factor	Operational power						LC1 D09	LC1 D12	LC1 D18	LC1 D25	LC1 D32	LC1 D38	LC1 D40A
≤ 85 %	P		–	–	–	–	1200	1200	1200	1200	1000	1000	1000
	0.5 P		–	–	–	–	3000	3000	2500	2500	2500	2500	2500
≤ 25 %	P		–	–	–	–	1800	1800	1800	1800	1200	1200	1200

Operational current and power conforming to UL, CSA (θ ≤ 60 °C)

Contactor size			LC1/ LP1 K06	LC1/ LP1 K09	LC1/ LP1 K12	LC1 D09	LC1 D12	LC1 D18	LC1 D25	LC1 D32	LC1 D38	LC1 D40A
Maximum operational current in AC-3	≤ 440 V	A	6	9	12	9	12	18	25	32	–	40
Rated operational power P (standard motor power ratings 60 Hz)	200/208 V	HP	1.5	2	3	2	3	5	7.5	10	–	10
	230/240 V	HP	1.5	3	3	2	3	5	7.5	10	–	10
	460/480 V	HP	3	5	7.5	5	7.5	10	15	20	–	30
	575/600 V	HP	3	5	10	7.5	10	15	20	25	–	30

(1) Depending on the operational power and the on-load factor (θ ≤ 60 °C).

Operational current and power conforming to IEC (θ ≤ 60 °C)

Contactor size			LC1 D50A	LC1 D65A	LC1 D80	LC1 D95	LC1 D115	LC1 D150	LC1 F185	LC1 F225	LC1 F265	LC1 F330	LC1 F400	LC1 F500	LC1 F630	LC1 F780	LC1 F800	LC1 BL	LC1 BM	LC1 BP	LC1 BR
Maximum operational current in AC-3	≤ 440 V	A	50	65	80	95	115	150	185	225	265	330	400	500	630	780	800	750	1000	1500	1800
Rated operational power P (standard motor power ratings)	220/240 V	kW	15	18,5	22	25	30	40	55	63	75	100	110	147	200	220	250	220	280	425	500
	380/400 V	kW	22	30	37	45	55	75	90	110	132	160	200	250	335	400	450	400	500	750	900
	415 V	kW	25	37	45	45	59	80	100	110	140	180	220	280	375	425	450	425	530	800	900
	440 V	kW	30	37	45	45	59	80	100	110	140	200	250	295	400	425	450	450	560	800	900
	500 V	kW	30	37	55	55	75	90	110	129	160	200	257	355	400	450	450	500	600	750	900
	660/690 V	kW	33	37	45	45	80	100	110	129	160	220	280	335	450	475	475	560	670	750	900
	1000 V	kW	–	–	45	45	65	75	100	100	147	160	185	335	450	450	450	530	530	670	750

Maximum operating rate in operating cycles/hour (1)

On-load factor	Operational power	LC1 D50A	LC1 D65A	LC1 D80	LC1 D95	LC1 D115	LC1 D150	LC1 F185	LC1 F225	LC1 F265	LC1 F330	LC1 F400	LC1 F500	LC1 F630	LC1 F780	LC1 F800	LC1 BL	LC1 BM	LC1 BP	LC1 BR
≤ 85 %	P	1000	1000	750	750	750	750	750	750	750	750	500	500	500	500	500	120	120	120	120
	0.5 P	2500	2500	2000	2000	2000	1200	2000	2000	2000	2000	1200	1200	1200	1200	600	120	120	120	120
≤ 25 %	P	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	600	600	120	120	120	120

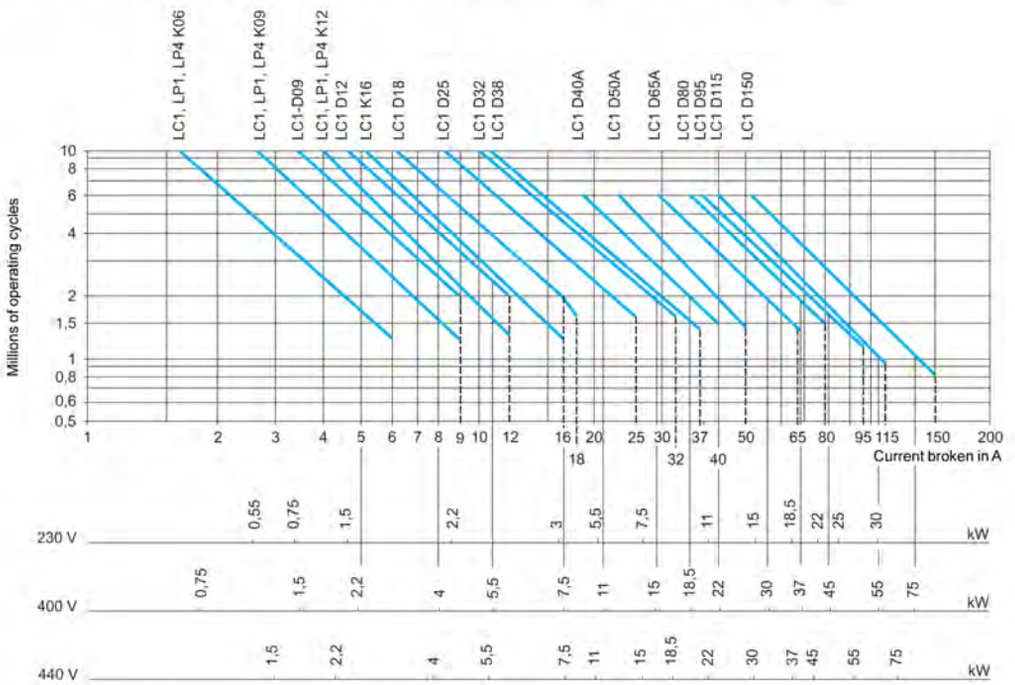
Operational current and power conforming to UL, CSA (θ ≤ 60 °C)

Contactor size			LC1 D50A	LC1 D65A	LC1 D80	LC1 D95	LC1 D115	LC1 D150	LC1 F185	LC1 F225	LC1 F265	LC1 F330	LC1 F400	LC1 F500	LC1 F630	LC1 F780	LC1 F800
Maximum operational current in AC-3	≤ 440 V	A	50	65	80	95	115	150	185	225	265	330	400	500	630	780	800
Rated operational power P (standard motor power ratings 50 Hz)	200/208 V	HP	15	20	30	30	30	40	50	60	60	75	100	150	250	–	350
	230/240 V	HP	15	20	30	30	40	50	60	75	75	100	125	200	300	450	400
	460/480 V	HP	40	40	60	60	75	100	125	150	150	200	250	400	600	900	900
	575/600 V	HP	40	50	60	60	100	125	150	150	200	250	300	500	800	–	900

TeSys contactors
For utilisation category AC-3

Selection according to required electrical durability, in category AC-3 (Ue ≤ 440 V)

Control of 3-phase asynchronous squirrel cage motors with breaking whilst running.
The current broken (Ic) in category AC-3 is equal to the rated operational current (Ie) of the motor.



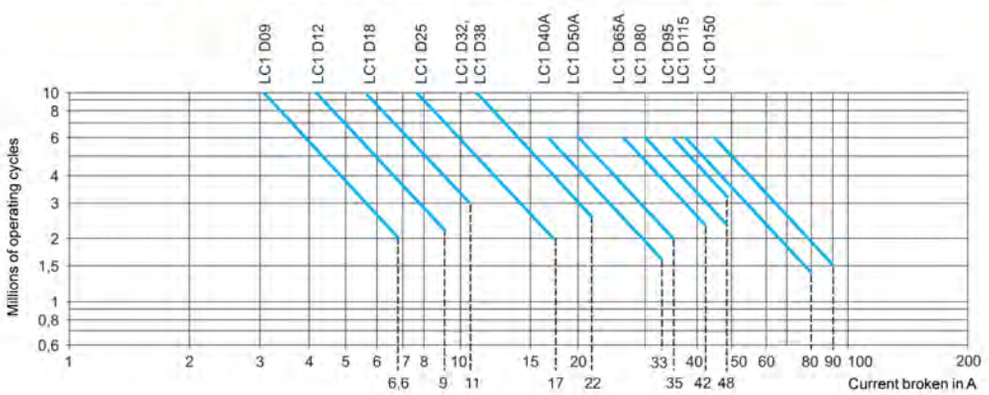
Operational power in kW-50 Hz.

Example:

Asynchronous motor with P = 5.5 kW - Ue = 400 V - Ie = 11 A - Ic = Ie = 11 A
or asynchronous motor with P = 5.5 kW - Ue = 415 V - Ie = 11 A - Ic = Ie = 11 A
3 million operating cycles required.
The above selection curves show the contactor rating needed: LC1 D18.

Selection according to required electrical durability, in category AC-3 (Ue = 660/690 V) *(1)*

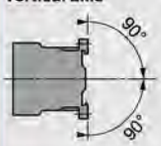
Control of 3-phase asynchronous squirrel cage motors with breaking whilst running.
The current broken (Ic) in category AC-3 is equal to the rated operational current (Ie) of the motor.



(1) For Ue = 1000 V, use the 660/690 V curves, but do not exceed the operational current at the operational power indicated for 1000 V.

TeSys contactors
TeSys K contactors and reversing contactors

Environment characteristics

Conforming to standards			IEC 60947, NF C 63-110, VDE 0660, BS 5424		
Product certifications	**LC• and LP• K06 to K12**		UL, CSA		
Operating positions			**Vertical axis**  Without derating	**Horizontal axis**  Without derating Possible positions for **LC• K** only. Contactor pull-in voltage: 0.85 Uc	
Connection			**Min.**	**Max.**	**Max. to IEC 60947**
Screw clamp terminals	Solid conductor	mm²	1 x 1.5	2 x 4	1 x 4 + 1 x 2.5
	Flexible conductor without cable end	mm²	1 x 0.75	2 x 4	2 x 2.5
	Flexible conductor with cable end	mm²	1 x 0.34	1 x 1.5 + 1 x 2.5	1 x 1.5 + 1 x 2.5
Spring terminals	Solid conductor	mm²	1 x 0.75	1 x 1.5	2 x 1.5
	Flexible conductor without cable end	mm²	1 x 0.75	1 x 1.5	2 x 1.5
Faston connectors	Clip	mm	2 x 2.8 or 1 x 6.35		
Solder pins for printed circuit board	With locating device between power and control circuits		4 mm x 35 microns		
Tightening torque	Philips head n° 2 and Ø 6	N.m	0.8		
Terminal referencing	Conforming to standards EN 50005 and EN 50012		Up to 5 contacts, depending on model		
Rated insulation voltage (Ui)	Conforming to IEC 60947	V	690		
	Conforming to VDE 0110 gr C	V	750		
	Conforming to BS 5424, NF C 20-040	V	690		
	Conforming to CSA 22-2 n° 14, UL 508	V	600		
Rated impulse withstand voltage (Uimp)		kV	8		
Protective treatment	Conforming to IEC 60068 (DIN 50016)		"TC" (Klimafest, Climateproof)		
Degree of protection	Conforming to VDE 0106		Protection against direct finger contact		
Ambient air temperature around the device	Storage	°C	- 50...+ 80		
	Operation	°C	- 25...+ 50		
Maximum operating altitude	Without derating	m	2000		
Vibration resistance 5 ... 300 Hz	Contactor open		2 gn		
	Contactor closed		4 gn		
Flame resistance	Conforming to UL 94		Self-extinguishing materials V1		
	Conforming to NF F 16-101 and 16-102		Conforming to requirement 2		
Shock resistance (1/2 sine wave, 11 ms)	Contactor open		On X axis: 6 gn On Y and Z axes: 10 gn		
	Contactor closed		On X axis: 10 gn On Y and Z axes: 15 gn		
Safe separation of circuits	Conforming to VDE 0106 and IEC 60536		SELV (Safety Extra Low Voltage), up to 400 V		

Characteristics (continued)

TeSys contactors
TeSys K contactors and reversing contactors

Pole characteristics

Type				K06	K09	K12	K16
Conventional thermal current (Ith)	For ambient temperature ≤ 50 °C		A	20			
Rated operational frequency			Hz	50/60			
Frequency limits of the operational current			Hz	Up to 400			
Rated operational voltage (Ue)			V	690			
Rated making capacity	I rms conforming to NF C 63 110 and IEC 60947		A	110	110	144	160
Rated breaking capacity	I rms conforming to NF C 63 110 and IEC 60947	220/230 V	A	110	110	–	–
		380/400 V	A	110	110	–	–
		415 V	A	110	110	–	–
		440 V	A	110	110	110	110
		500 V	A	80	80	80	80
		660/690 V	A	70	70	70	70
Permissible short time rating	In free air for a time "t" from cold state (θ ≤ 50 °C)	1 s	A	90	90	115	115
		5 s	A	85	85	105	105
		10 s	A	80	80	100	100
		30 s	A	60	60	75	75
		1 min	A	45	45	55	55
		3 min	A	40	40	50	50
		≥ 15 min	A	20	20	25	25
Short-circuit protection	gG fuse U ≤ 440 V (aM fuse, see page 22009/2)		A	25			
Average impedance per pole	At Ith and 50 Hz		mΩ	3			
Use in category AC-1 resistive circuits, heating, lighting (Ue ≤ 440 V)	Maximum rated operational current for a temperature ≤ 50 °C		A	20			
	Maximum rated operational current for a temperature ≤ 70 °C		A	16 for Ue only			
	Rated operational current limits in relation to the on-load factor and operating frequency			On-load factor		90 %	60 % 30 %
			A	300 operating cycles/hour		13	15 18
			A	120 operating cycles/hour		15	18 19
			A	30 operating cycles/hour		19	20 20
	Increase in rated operational current by paralleling of poles			Apply the following coefficients to the above currents; these coefficients take into account an often unbalanced distribution of current between the poles			
				2 poles in parallel: K = 1.60			
				3 poles in parallel: K = 2.25			
				4 poles in parallel: K = 2.80			
Use in category AC-3 squirrel cage motors	Operational power according to the voltage. Voltage 50 or 60 Hz	115 V single-ph.	kW	0.37	0.55	–	–
		220 V single-ph.	kW	0.75	1.1	–	–
		220/230 V 3-ph.	kW	1.5	2.2	3	4
		380/415 V 3-ph.	kW	2.2	4	5.5	7.5
		440/480 V 3-ph.	kW	3	4	5.5/4 (480)	5.5/4 (480)
		500/600 V 3-ph.	kW	3	4	4	4
		660/690 V 3-ph.	kW	3	4	4	4
	Maximum operating rate (in operating cycles/hour in relation to % of rated power)			Op. cycles/h		600	900 1200
				Power		100 %	75 % 50 %

Characteristics (continued)

TeSys contactors
TeSys K contactors and reversing contactors

Auxiliary contact characteristics of contactors and instantaneous contact blocks

Number of auxiliary contacts	On **LC● K** or **LP● K** 3-pole			1
	On **LA1 K**			2 or 4
Rated operational voltage (Ue)	Up to		V	690
Rated insulation voltage (Ui)	Conforming to BS 5424		V	690
	Conforming to IEC 60947		V	690
	Conforming to VDE 0110 group C		V	750
	Conforming to CSA C 22-2 n° 14		V	600
Conventional thermal current (Ith)	For ambient temperature ≤ 50 °C		A	10
Frequency of the operational current			Hz	Up to 400
Minimum switching capacity	U min (DIN 19 240)		V	17
	I min		mA	5
Short-circuit protection	Conforming to IEC 60947 and VDE 0660, gG fuse		A	10
Rated making capacity	Conforming to IEC 60947	I rms	A	110
Short-time rating	Permissible for	1 s	A	80
		500 ms	A	90
		100 ms	A	110
Insulation resistance			MΩ	> 10
Non-overlap distance	LA1 K: linked contacts conforming to INRS, BIA and CNA specifications		mm	0.5 (see schemes pages 24407/3 and 24408/3)

Operational power of contacts conforming to IEC 60947

a.c. supply, category AC-15

Electrical durability (valid for up to 3600 operating cycles/hour) on an inductive load such as the coil of an electromagnet: making current (cos φ 0.7) = 10 times the power broken (cos φ 0.4).

V	24	48	110/ 127	220/ 230	380/ 400	440	600/ 690
1 million operating cycles	VA	48	96	240	440	800	880	1200
3 million operating cycles	VA	17	34	86	158	288	317	500
10 million operating cycles	VA	7	14	36	66	120	132	200
Occasional making capacity	VA	1000	2050	5000	10 000	14 000	13 000	9000

d.c. supply, category DC-13

Electrical durability (valid for up to 1200 operating cycles/hour) on an inductive load such as the coil of an electromagnet, without economy resistor, the time constant increasing with the load.

V	24	48	110	220	440	600
W	120	80	60	52	51	50
W	55	38	30	28	26	25
W	15	11	9	8	7	6
W	720	600	400	300	230	200

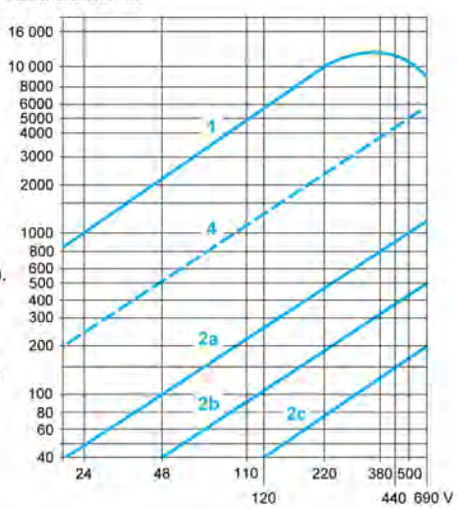
1 Breaking limit of contacts valid for:
- maximum of 50 operating cycles at 10 s intervals (power broken = making current x cos φ 0.7).

2 Electrical durability of contacts for:
- 1 million operating cycles (2a)
- 3 million operating cycles (2b)
- 10 million operating cycles (2c).

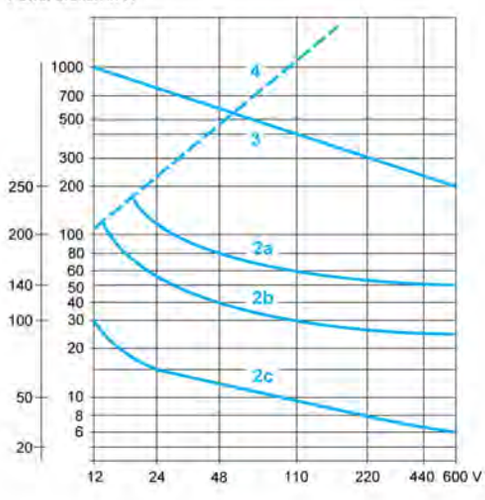
3 Breaking limit of contacts valid for:
- maximum of 20 operating cycles at 10 s intervals with current passing for 0.5 s per operating cycle.

4 Thermal limit.

Power broken in VA



Power broken in W



TeSys contactors

Contactors for motor control, 6 to 16 A in category AC-3 and 6 to 12 A in category AC-4

Control circuit: a.c.

LC1 K0910●●

LC1 K09103●●

LC1 K09107●●

LC1 K09105●●

LC7 K0910●●

Contactor selection according to utilisation category, see pages 24565/2 to 24565/5 and 24566/2 to 24566/5.
Mounting on 35 mm ⎓ rail or Ø 4 screw fixing.
Screws in the open "ready-to-tighten" position.
Add-on auxiliary contact blocks and accessories, see pages 24406/2 to 24406/5.

3-pole contactors for standard applications

Standard power ratings of 3-phase motors 50-60 Hz in category AC-3			Rated operational current in category AC-3 440 V up to	Instantaneous auxiliary contacts		Basic reference, to be completed by adding the voltage code *(1) (2)*	Weight
220 V 230 V	380 V 415 V	440/500 V 660/690 V					
kW	kW	kW	A				kg
Screw clamp connections							
1.5	2.2	3	**6**	1	–	**LC1 K0610●●**	0.180
				–	1	**LC1 K0601●●**	0.180
2.2	4	4	**9**	1	–	**LC1 K0910●●**	0.180
				–	1	**LC1 K0901●●**	0.180
3	5.5	4 (> 440)	**12**	1	–	**LC1 K1210●●**	0.180
		5.5 (440)		–	1	**LC1 K1201●●**	0.180
4	7.5	4 (> 440)	**16**	1	–	**LC1 K1610●●**	0.180
		5.5 (440)		–	1	**LC1 K1601●●**	0.180

Spring terminal connections

For 6 to 12 A ratings only, in the references selected above, insert a figure **3** before the voltage code.
Example: **LC1 K0610●●** becomes **LC1 K06103●●**.

Faston connectors, 1 x 6.35 or 2 x 2.8

For 6 to 16 A ratings, in the references selected above, insert a figure **7** before the voltage code.
Example: **LC1 K0610●●** becomes **LC1 K06107●●**.

Solder pins for printed circuit boards

For 6 to 16 A ratings, in the references selected above, insert a figure **5** before the voltage code.
Example: **LC1 K0610●●** becomes **LC1 K06105●●**.

3-pole silent contactors

Recommended for use in areas sensitive to noise, high interference mains supplies, etc.
Coil with rectifier incorporated, suppressor fitted as standard.

Screw clamp connections						
1.5	2.2	3	**6**	1	–	**LC7 K0610●●**	0.225
				–	1	**LC7 K0601●●**	0.225
2.2	4	4	**9**	1	–	**LC7 K0910●●**	0.225
				–	1	**LC7 K0901●●**	0.225
3	5.5	4 (> 440)	**12**	1	–	**LC7 K1210●●**	0.225
		5.5 (440)		–	1	**LC7 K1201●●**	0.225

Faston connectors, 1 x 6.35 or 2 x 2.8

In the references selected above, insert a figure **7** before the voltage code.
Example: **LC7 K0610●●** becomes **LC7 K06107●●**.

Solder pins for printed circuit boards

In the references selected above, insert a figure **5** before the voltage code.
Example: **LC7 K0610●●** becomes **LC7 K06105●●**.

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

a.c. supply

Contactors LC1 K (0.8…1.15 Uc) *(0.85…1.1 Uc)*

Volts	12	20	24 (2)	36	42	48	110	115	120	127	200/208		*220/230*	230	230/240
50/60 Hz	J7	Z7	B7	C7	D7	E7	F7	FE7	G7	FC7	L7		*M7*	*P7*	*U7*
Volts	**256**	**277**	***380/400***		**400**	***400/415***	**440**	**480**	**500**	**575**	**600**	**660/690**			
50/60 Hz	W7	UE7	Q7	–	V7	*N7*	R7	T7	S7	SC7	X7	*Y7*	–	–	

Up to and including 240 V, coil with integral suppression device available: add **2** to the code required. Example: **J72**.

Contactors LC7 K (0.85…1.1 Uc)

Volts	24	42	48	110	115	220	230/240
50/60 Hz	B7	D7	E7	F7	FE7	M7	U7

(2) For mains supplies with a high level of interference (voltage surge > 800 V), use a suppressor module LA4 KE1FC (50…129 V) or LA4 KE1UG (130…250 V), see page 24406/4.