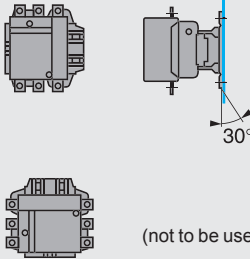
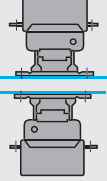

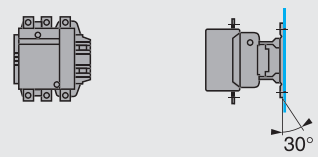
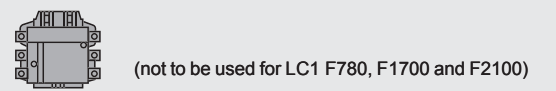
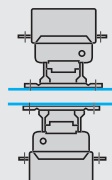


Environment					
Contactor type					
Rated insulation voltage (U _i)	Conforming to IEC 60947-4-1	V	LC1 F115 1000	LC1 F150 1000	LC1 F185 1000
	Conforming to VDE 0110 gr C	V	1500	1500	1500
Rated impulse withstand voltage (U _{imp})	Coil not connected to the power circuit	kV	8	8	8
Conforming to standards			EN 60947-1, EN 60947-4-1, IEC 60947-1, IEC 60947-4-1, JEM 1038		
Product certifications			CSA, UL, BV, GL, DNV, RINA, RMROS, LROS, CCC		
Degree of protection	Conforming to IEC 60529		IP 2X front face with shrouds LA9 F		
	Conforming to VDE 0106		Front face protected against direct finger contact with shrouds LA9 F		
Protective treatment	Standard version		"TH"		
Ambient air temperature around the device	Storage	°C	- 60...+ 80		
	Operation	°C	- 5...+ 55		
	Permissible at U _c (1)	°C	- 40...+ 70		
Maximum operating altitude	Without derating	m	3000		
Operating positions	Without derating		 <p>(not to be used for LC1 F780, F1700 and F2100)</p>		
			 <p>Apply the following derating coefficients: 0.75 on the pull-in voltage, 0.9 on the drop-out voltage and 0.8 on the operational current in AC-1</p> <p>Apply the following derating coefficients: 1.15 on the pull-in voltage, 1.1 on the drop-out voltage and 0.8 on the operational current in AC-1</p> <p>In either case: neither the making and breaking capacities nor the electrical and mechanical durabilities can be assured.</p>		
	Not to be used				
Shock resistance (2) 1/2 sine wave = 11 ms	Contactor open		9 gn	9 gn	7 gn
	Contactor closed		15 gn	15 gn	15 gn
Vibration resistance (2) 5...300 Hz	Contactor open		2 gn	2 gn	2 gn
	Contactor closed		6 gn	6 gn	5 gn

(1) In these conditions, it is recommended that LX9 F coils be used for contactor sizes F115 to F225.

(2) In the least favourable direction, without change of contact state (coil at U_c). Where higher resistance to mechanical shock is required, select shock-proof contactors. Please consult your Regional Sales Office.

LC1 F225	LC1 F265	LC1 F330	LC1 F400	LC1 F500	LC1 F630	LC1 F780	LC1 F800	LC1 F1700	LC1 F2100	
1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	
1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	
8	8	8	8	8	8	8	8	8	8	
EN 60947-1, EN 60947-4-1, IEC 60947-1, IEC 60947-4-1, JEM 1038										
CSA, UL, BV, GL, DNV, RINA, RMROS, LROS, CCC							UL, CSA, GL, LROS	UL, CSA, CCC (pending)		
IP 20 front face with shrouds LA9 F								-		
Front face protected against direct finger contact with shrouds LA9 F								-		
"TH"										
- 60...+ 80							- 60...+ 80	- 60...+ 80		
- 5...+ 55							- 5...+ 55	- 5...+ 40		
- 40...+ 70							- 5...+ 55	- 40...+ 60		
3000										
   <p>Apply the following derating coefficients: 0.75 on the pull-in voltage, 0.9 on the drop-out voltage and 0.8 on the operational current in AC-1.</p> <p>Apply the following derating coefficients: 1.15 on the pull-in voltage, 1.1 on the drop-out voltage and 0.8 on the operational current in AC-1.</p> <p>In either case: neither the making and breaking capacities nor the electrical and mechanical durabilities can be assured</p>										
7 gn	6 gn	6 gn	6 gn	9 gn	6 gn	5 gn	6 gn	6 gn	6 gn	
15 gn	15 gn	15 gn	15 gn	15 gn	15 gn	15 gn	15 gn	15 gn	15 gn	
2 gn	2 gn	2 gn	1.5 gn	2 gn	2 gn	2.5 gn	2 gn	2 gn	2 gn	
5 gn	5 gn	5 gn	5 gn	4 gn	4 gn	5.5 gn	4 gn	4 gn	4 gn	

Pole characteristics				LC1 F115	LC1 F150	LC1 F185
Contactor type						
Number of poles			3 or 4	3 or 4	3 or 4	
Rated operational current (I _e)(U _e ≤ 440 V)	In AC-3, θ ≤ 55 °C	A	115	150	185	
	In AC-1, θ ≤ 40 °C	A	200	250	275	
Rated operational voltage (U _e)	Up to	V	1000	1000	1000	
Frequency limits	Of the operational current (1)	Hz	16 ^{2/3} ...200	16 ^{2/3} ...200	16 ^{2/3} ...200	
Conventional thermal current	θ ≤ 40 °C	A	200	250	275	
Rated making capacity	I _{rms} conforming to IEC 60947-4-1	A	Making current: 10 x I in AC-3 or 12 x I in AC-4			
Rated breaking capacity	I _{rms} conforming to IEC 60947-4-1	A	Making and breaking current: 8 x I in AC-3 or 10 x I in AC-4			
Maximum permissible current No current flowing for previous 60 minutes, at θ ≤ 40 °C	For 10 s	A	1100	1200	1500	
	For 30 s	A	640	700	920	
	For 1 min	A	520	600	740	
	For 3 min	A	400	450	500	
	For 10 min	A	320	350	400	
Short-circuit protection by fuses U ≤ 440 V	Motor circuit (type aM)	A	125	160	200	
	With thermal overload relay (type gG)	A	200	200	315	
	gG fuses	A	200	250	315	
Average impedance per pole	At I _{th} and 50 Hz	mΩ	0.37	0.35	0.33	
Power dissipation per pole for the above operational currents	AC-3	W	5	8	12	
	AC-1	W	15	22	25	
Connection			Maximum c.s.a.			
Bar	Number of bars		2	2	2	
	Bar	mm	20 x 3	25 x 3	25 x 3	
Cable with lug		mm²	95	120	150	
Cable with connector		mm²	95	120	150	
Bolt diameter		mm	Ø 6	Ø 8	Ø 8	
Tightening torque	Power circuit connections	N.m	10	18	18	

(1) Sine wave without interference. Above these values, please consult your Regional Sales Office.

(2) With set of right-angled connectors LA9 F2100 (see page 5/125).

(3) Paralleling of poles must be carried out only in accordance with the fuse manufacturer's recommendations.

5

LC1 F225	LC1 F265	LC1 F330	LC1 F400	LC1 F500	LC1 F630	LC1 F780	LC1 F800	LC1 F1700	LC1 F2100
3 or 4	3 or 4	3 or 4	2, 3 or 4	2, 3 or 4	2, 3 or 4	3 or 4	3	3	3
225	265	330	400	500	630	780	800	–	–
315	350	400	500	700	1000 1250	1600	1000	1700	2100 (2)
1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
16 ^{2/3} ...200	16 ^{2/3} ...200	16 ^{2/3} ...200	16 ^{2/3} ...200	16 ^{2/3} ...200	16 ^{2/3} ...200	16 ^{2/3} ...200	16 ^{2/3} ...200	16 ^{2/3} ...200	16 ^{2/3} ...200
315	350	400	500	700	1000 1250	1600	1000	1700	2100 (2)
Making current: 10 x I in AC-3 or 12 x I in AC-4								Making current: 1.5 x I in AC-1	
Making and breaking current: 8 x I in AC-3 or 10 x I in AC-4								Making and breaking current: 1.5 x I in AC-1	
1800	2200	2650	3600	4200	5050	6250	5500	–	–
1000	1230	1800	2400	3200	4400	5600	4600	–	–
850	950	1300	1700	2400	3400	4600	3600	–	–
560	620	900	1200	1500	2200	3000	2600	–	–
440	480	750	1000	1200	1600	2200	1700	–	–
250	315	400	400	500	630	800	800	–	–
315	500	500	630	800	800	1000	1000	–	–
315	400	500	500	800	1000	2 x 800 (3)	1000	2 x 800 (3)	2 x 1000 (3)
0.32	0.3	0.28	0.26	0.18	0.12	0.10	0.12	0.10	0.10
16	21	31	42	45	48	60	77	–	–
32	37	44	65	88	120	250	120	200	200
2	2	2	2	2	2 3	2	2	3	4
32 x 4	32 x 4	30 x 5	30 x 5	40 x 5	60 x 5 60 x 5	100 x 5	60 x 5	100 x 5	100 x 5
185	240	240	2 x 150	2 x 240	–	–	–	–	–
185	240	–	–	–	–	–	–	–	–
∅10	∅10	∅10	∅10	∅10	∅12	2 x ∅12	∅12	∅12 (∅10 with set of right-angled connectors LA9 F2100)	
35	35	35	35	35	58	58	58	58 (35 with set of right-angled connectors LA9 F2100)	

Control circuit characteristics with LX1 or LX9 coil

Contactor type			LC1 F115	LC1 F150	LC1 F185
Rated control circuit voltage (Uc)	50 or 60 Hz	V	24...1000		
Control voltage limits (θ ≤ 55 °C)					
50 or 60 Hz coils	Operation		0.85...1.1 Uc		
	Drop-out		0.35...0.55 Uc		
40...400 Hz coils	Operation		–		
	Drop-out		–		
Average consumption at 20 °C and at Uc					
~ 50 Hz Inrush	50 Hz coil	VA	550	550	805
	40...400 Hz coil	VA	–	–	–
	Cos φ		0.3	0.3	0.3
Sealed	50 Hz coil	VA	45	45	55
	40...400 Hz coil	VA	–	–	–
	Cos φ		0.3	0.3	0.3
~ 60 Hz Inrush	60 Hz coil	VA	660	660	970
	40...400 Hz coil	VA	–	–	–
	Cos φ		0.3	0.3	0.3
Sealed	60 Hz coil	VA	55	55	66
	40...400 Hz coil	VA	–	–	–
	Cos φ		0.3	0.3	0.3
Heat dissipation		W	12...16	12...16	18...24
Operating time (1)	Closing "C"	ms	23...35	23...35	20...35
	Opening "O"	ms	5...15	5...15	7...15
Mechanical durability at Uc	In millions of operating cycles		10	10	10
Maximum operating rate at ambient temperature ≤ 55 °C	In operating cycles per hour		2400	2400	2400
Connection					
Flexible cable without cable end	1 or 2 conductors	mm²	Min/max c.s.a. 1/4	1/4	1/4
	1 conductor	mm²	1/4	1/4	1/4
Flexible cable with cable end	2 conductors	mm²	1/2.5	1/2.5	1/2.5
	1 or 2 conductors	mm²	1/4	1/4	1/4
Solid cable without cable end					
Tightening torque		N.m	1.2	1.2	1.2
Mechanical latching					
Mechanical latch blocks LA6 DK must not be fitted on LC1 F contactors. For similar type of operation, use magnetic latching contactors CR1 F. See pages 5/240 to 5/267.					

(1) The closing time "C" is measured from the moment the coil supply is switched on to initial contact of the main poles. The opening time "O" is measured from the moment the coil supply is switched off to the moment the main poles separate.

(2) Control circuit characteristics with LX1 coil.

LC1 F225	LC1 F265	LC1 F330	LC1 F400	LC1 F500	LC1 F630	LC1 F780	LC1 F800	LC1 F1700	LC1 F2100
24...1000			48...1000		48...1000	110...500	110...400	110...500 (2)	110...500 (2)
0.85...1.1 Uc	-								
0.35...0.55 Uc	-								
-	0.85...1.1 Uc		0.85...1.1 Uc		0.85...1.1 Uc	0.85...1.1 Uc	0.85...1.1 Uc	0.85...1.1 Uc	0.85...1.1 Uc
-	0.35...0.55 Uc		0.3...0.5 Uc		0.25...0.5 Uc	0.2...0.4 Uc	0.3...0.5 Uc	0.3...0.5 Uc	0.3...0.5 Uc
805	-	-	-	-	-	-	-	-	-
-	650	650	1075	1100	1650	2100	1700	2200	2200
0.3	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
55	-	-	-	-	-	-	-	-	-
-	10	10	15	18	22	50	12	36	36
0.3	0.9	0.9	0.9	0.9	0.9	0.9	-	0.9	0.9
970	-	-	-	-	-	-	-	-	-
-	650	650	1075	1100	1650	2100	1700	2200	2200
0.3	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
66	-	-	-	-	-	-	-	-	-
-	10	10	15	18	22	50	12	36	36
0.3	0.9	0.9	0.9	0.9	0.9	0.9	-	0.9	0.9
18...24	8	8	14	18	20	2 x 22	25	2 x 18	2 x 18
20...35	40...65	40...65	40...75	40...75	40...80	40...80	60...80	40...75	40...75
7...15	100...170	100...170	100...170	100...170	100...200	130...230	150...180	100...170	100...170
10	10	10	10	10	5	5	5	5	5
2400	2400	2400	2400	2400	1200	600	600	600	600
Min/max c.s.a.									
1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4
1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4
1/2.5	1/2.5	1/2.5	1/2.5	1/2.5	1/2.5	1/2.5	1/2.5	1/2.5	1/2.5
1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4
1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2

Mechanical latch blocks LA6 DK must not be fitted on LC1 F contactors.
 For similar type of operation, use magnetic latching contactors CR1 F.
 See pages 5/240 to 5/267.

Control circuit characteristics with LX4 coil

Contactor type			LC1 F115	LC1 F150	LC1 F185	
Rated control circuit voltage (Uc)	---	V	24...460	24...460	24...460	
Control voltage limits (θ ≤ 55 °C)	Operation		0.85...1.1 Uc	0.85...1.1 Uc	0.85...1.1 Uc	
	Drop-out		0.15...0.2 Uc	0.15...0.2 Uc	0.15...0.2 Uc	
Average consumption at 20 °C and at Uc	---	Inrush	W	560	560	800
		Sealed	W	4.5	4.5	5
Average operating time at Uc (1)	Closing "C"	ms	30...40	30...40	30...40	
	Opening "O"	ms	30...50	30...50	30...50	
			<i>Note: The arcing time depends on the circuit switched by the poles. For all normal 3-phase applications, the arcing time is less than 10 ms. The load is isolated from the supply after a time equal to the sum of the opening time and the arcing time.</i>			
Mechanical durability at Uc	In millions of operating cycles		10	10	10	
Maximum operating rate at ambient temperature ≤ 55 °C	In operating cycles per hour		2400	2400	2400	
Cabling						
Flexible cable without cable end	1 conductor	mm²	Min/max c.s.a. 1/4	1/4	1/4	
	2 conductors	mm²	1/4	1/4	1/4	
Flexible cable with cable end	1 conductor	mm²	1/4	1/4	1/4	
	2 conductors	mm²	1/2.5	1/2.5	1/2.5	
Solid cable without cable end	1 conductor	mm²	1/4	1/4	1/4	
	2 conductors	mm²	1/4	1/4	1/4	
Tightening torque		N.m	1.2	1.2	1.2	
Mechanical latching	Mechanical latch blocks LA6 DK must not be fitted on LC1 F contactors. For similar type of operation, use magnetic latching contactors CR1 F. See pages 5/240 to 5/267.					

(1) The operating times depend on the type of contactor electromagnet and its control mode. The closing time "C" is measured from the moment the coil supply is switched on to initial contact of the main poles. The opening time "O" is measured from the moment the coil supply is switched off to the moment the main poles separate.

LC1 F225	LC1 F265	LC1 F330	LC1 F400	LC1 F500	LC1 F630	LC1 F780	LC1 F800	LC1 F1700	LC1 F2100
24...460	24...460	24...460	48...440	48...440	48...440	110...440	110...400	110...440	110...440
0.85...1.1 Uc	0.85...1.1 Uc	0.85...1.1 Uc	0.85...1.1 Uc	0.85...1.1 Uc	0.85...1.1 Uc	0.85...1.1 Uc	0.85...1.1 Uc	0.85...1.1 Uc	0.85...1.1 Uc
0.15...0.2 Uc	0.15...0.2 Uc	0.15...0.2 Uc	0.2...0.35 Uc	0.2...0.35 Uc	0.2...0.35 Uc	0.2...0.4 Uc	0.3...0.5 Uc	0.2...0.35 Uc	0.2...0.35 Uc
800	750	750	1000	1100	1600	2 x 1000	1900	2100	2100
5	5	5	6	6	9	2 x 21	12	10	10
30...40	40...50	40...50	50...60	50...60	60...70	70...80	60...80	50...60	50...60
30...50	40...65	40...65	45...60	45...60	40...50	100...130	40...50	45...60	45...60
Note: The arcing time depends on the circuit switched by the poles. For all normal 3-phase applications, the arcing time is less than 10 ms. The load is isolated from the supply after a time equal to the sum of the opening time and the arcing time.									
10	10	10	10	10	5	5	5	5	5
2400	2400	2400	2400	2400	1200	600	600	600	600
Min/max c.s.a.									
1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4
1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4
1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4
1/2.5	1/2.5	1/2.5	1/2.5	1/2.5	1/2.5	1/2.5	1/2.5	1/2.5	1/2.5
1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4
1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4
1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Mechanical latch blocks LA6 DK must not be fitted on LC1 F contactors. For similar type of operation, use magnetic latching contactors CR1 F. See pages 5/240 to 5/267.									

TeSys contactors

TeSys F contactors for motor control in utilisation category AC-3 (115 to 800 A)

Control circuit: a.c. or d.c.



LC1 F225



LC1 F630

3-pole contactors

Standard power ratings of 3-phase motors 50-60 Hz in category AC-3							Rated operational current in AC-3 up to	Basic reference, to be completed by adding the voltage code (2) Screw fixing, cabling (1)	Weight
220 V	380 V	660 V	440 V	500 V	690 V	1000 V			
kW	kW	kW	kW	kW	kW	kW	A		kg
30	55	59	59	75	80	65	115	LC1 F115●●	3.430
40	75	80	80	90	100	65	150	LC1 F150●●	3.430
55	90	100	100	110	110	100	185	LC1 F185●●	4.650
63	110	110	110	129	129	100	225	LC1 F225●●	4.750
75	132	140	140	160	160	147	265	LC1 F265●●	7.440
100	160	180	200	200	220	160	330	LC1 F330●●	8.600
110	200	220	250	257	280	185	400	LC1 F400●●	9.100
147	250	280	295	355	335	335	500	LC1 F500●●	11.350
200	335	375	400	400	450	450	630	LC1 F630●●	18.600
220	400	425	425	450	475	450	780	LC1 F780●●	39.500
250	450	450	450	450	475	450	800	LC1 F800●●	18.750

Note: auxiliary contact blocks, modules and accessories: see pages 5/122 to 5/127.

(1) Power terminals can be protected against direct finger contact by the addition of shrouds, to be ordered separately, except on contactors LC1 F780 (see page 5/126).

(2) Standard control circuit voltages (for other voltages, please consult your Regional Sales Office).

Volts ~	24	48	110	115	120	208	220	230	240	380	400	415	440
LC1 F115...F225													
50 Hz (coil LX1)	B5	E5	F5	FE5	-	-	M5	P5	U5	Q5	V5	N5	-
60 Hz (coil LX1)	-	E6	F6	-	G6	L6	M6	-	U6	Q6	-	-	R6
40...400 Hz (coil LX9)	-	E7	F7	FE7	G7	L7	M7	P7	U7	Q7	V7	N7	R7
LC1 F265...F330													
40...400 Hz (coil LX1)	B7	E7	F7	FE7	G7	L7	M7	P7	U7	Q7	V7	N7	R7
LC1 F400...F630													
40...400 Hz (coil LX1)	-	E7	F7	FE7	G7 (3)	L7	M7	P7	U7	Q7	V7	N7	R7
LC1 F780													
40...400 Hz (coil LX1)	-	-	F7	FE7	F7	L7	M7	P7	U7	Q7	V7	N7	R7
LC1 F800													
40...400 Hz (coil LX4) (4)	-	-	FW	FW	FW	-	MW	MW	MW	QW	QW	QW	-

Volts ---	24	48	110	125	220	230	250	400	440
LC1 F115...F330									
(coil LX4 F)	BD	ED	FD	GD	MD	MD	UD	-	RD
LC1 F400...F630									
(coil LX4 F)	-	ED	FD	GD	MD	-	UD	-	RD
LC1 F780									
(coil LX4 F)	-	-	FD	GD	MD	-	UD	-	RD
LC1 F800									
(coil LX4 F)	-	-	FW	FW	MW	MW	-	QW	-

(3) F7 for LC1 F630.

(4) Coil LX4 F8●● + rectifier DR5TE●●.

TeSys contactors

TeSys F contactors for control in category AC-1,
(200 to 2100 A)

Control circuit: a.c. or d.c.



LC1 F1854



LC1 F4004



LC1 F6304



LC1 F1700



LC1 F2100

2, 3 or 4-pole contactors

Maximum current in AC-1 ($\theta \leq 40^\circ\text{C}$)	Number of poles	Basic reference, to be completed by adding the voltage code (2) Screw fixing, cabling (1)	Weight
A			kg
200	3	LC1 F115●●	3.430
	4	LC1 F1154●●	3.830
250	3	LC1 F150●●	3.430
	4	LC1 F1504●●	3.830
275	3	LC1 F185●●	4.650
	4	LC1 F1854●●	5.450
315	3	LC1 F225●●	4.750
	4	LC1 F2254●●	5.550
350	3	LC1 F265●●	7.440
	4	LC1 F2654●●	8.540
400	3	LC1 F330●●	8.600
	4	LC1 F3304●●	9.500
500	2	LC1 F4002●●	8.000
	3	LC1 F400●●	9.100
	4	LC1 F4004●●	10.200
700	2	LC1 F5002●●	9.750
	3	LC1 F500●●	11.350
	4	LC1 F5004●●	12.950
1000	2	LC1 F6302●●	15.500
	3	LC1 F630●●	18.600
	4	LC1 F6304●●	21.500
1250	2	LC1 F6302●●S011	15.500
	3	LC1 F630●●S011	18.600
	4	LC1 F6304●●S011	21.500
1600	3	LC1 F780●●	39.500
	4	LC1 F7804●●	48.000
1700	3	LC1 F1700	30.000
2100 (3)	3	LC1 F2100	31.000

Note: auxiliary contact blocks, modules and accessories: see pages 5/122 to 5/127.

(1) Power terminals can be protected against direct finger contact by the addition of shrouds, to be ordered separately (except LC1 F780, LC1 F1700 and LC1 F2100), see page 5/126.

(2) Standard control circuit voltages, see previous page.

(3) With set of right-angled connectors LA9 F2100 (see page 5/125).

TeSys contactors

TeSys F reversing contactors for motor control in utilisation category AC-3 (115 to 265 A), pre-assembled

Control circuit: a.c. or d.c.

523007



LC2 F115

3-pole reversing contactors (horizontally mounted) (1)

Pre-wired power connections

Standard power ratings of 3-phase motors 50/60 Hz in category AC-3							Operational current in AC-3	Maximum operational voltage	Contactors supplied without coil (2) Complete reference Fixing, cabling (3)	Weight
kW	kW	kW	kW	kW	kW	kW	A	V		kg
220 V 380 V				660 V			440 V			
230 V 400 V 415 V 440 V 500 V 690 V 1000 V							up to			
30	55	59	59	75	80	65	115	1000	LC2 F115	7.560
40	75	80	80	90	100	65	150	1000	LC2 F150	7.560
55	90	100	100	110	110	100	185	1000	LC2 F185	10.100
63	110	110	110	129	129	100	225	1000	LC2 F225	14.200
75	132	140	140	160	160	147	265	1000	LC2 F265	16.480

Accessories (to be ordered separately)

Description	For reversing contactors	Quantity required	Reference	Weight kg
Power terminal protection shrouds	LC2 F115	2	LA9 F701	0.250
	LC2 F150, F185	2	LA9 F702	0.250
	LC2 F225, F265	2	LA9 F703	0.250
Auxiliary contact blocks and add-on modules	–	–	See pages 5/122 to 5/1227	

(1) Fitted with a mechanical interlock without electrical interlocking. Order separately 2 auxiliary contact blocks LAD N●1 to obtain electrical interlocking between the 2 contactors, see page 5/123. For accessories, see pages 5/124 to 5/127.

(2) Coils to be ordered separately:
- a.c. supply, see pages 5/130 and 25/131,
- d.c. supply, see page 5/133

(3) Screw fixing.
Power terminals can be protected against direct finger contact by the addition of shrouds, to be ordered separately, see above.

TeSys contactors

TeSys F changeover contactor pairs for control in utilisation category AC-1 (200 to 350 A), pre-assembled

Control circuit: a.c. or d.c.

5226098



LC2 F1854

4-pole changeover contactor pairs (horizontally mounted) (1)

Pre-wired power connections

Utilisation category AC-1 Non inductive loads Maximum operational current $\theta < 40\text{ }^{\circ}\text{C}$	Maximum operational voltage	Contactors supplied without coil (2) Complete reference Fixing, cabling (3)	Weight
A	V		kg
200	1000	LC2 F1154	8.860
250	1000	LC2 F1504	8.860
275	1000	LC2 F1854	12.100
315	1000	LC2 F2254	15.200
350	1000	LC2 F2654	19.480

Accessories (to be ordered separately)

Description	For changeover pairs	Quantity required	Reference	Weight kg
Power terminal protection shrouds	LC2 F1154	2	LA9 F706	0.250
	LC2 F1504, F1854	2	LA9 F707	0.250
	LC2 F2254, F2654	2	LA9 F708	0.250
Auxiliary contact blocks and add-on modules	–	–	See pages 5/122 to 5/127	

(1) Fitted with a mechanical interlock without electrical interlocking. Order separately 2 auxiliary contact blocks LAD N●1 to obtain electrical interlocking between the 2 contactors, see page 5/123. For accessories, see pages 5/124 to 5/127.

(2) Coils to be ordered separately:
- a.c. supply, see pages 5/130 and 5/131,
- d.c. supply, see page 5/133.

(3) Screw fixing.
Power terminals can be protected against direct finger contact by the addition of shrouds, to be ordered separately, see above.

TeSys contactors

TeSys F reversing contactors and changeover contactor pairs

Components for assembling 3-pole reversing contactors and changeover contactor pairs, for customer assembly

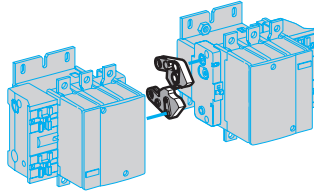
Horizontally mounted

Reversers assembled using 2 contactors of identical rating, type :

- LC1 F115
- LC1 F150
- LC1 F185
- LC1 F225
- LC1 F265
- LC1 F330
- LC1 F400
- LC1 F500
- LC1 F630
- LC1 F800

Mechanical interlocks

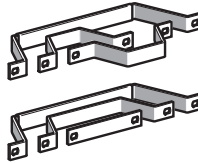
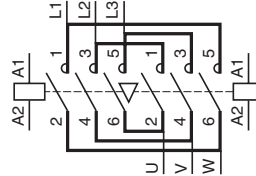
LA9 F●●970 (2)



Sets of power connections

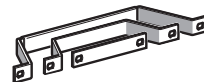
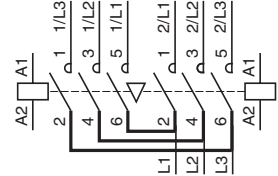
Reversing contactors

LA9 F●●●76 (2)



3-pole changeover contactor pairs (1)

LA9 F●●●82 (2)



Vertically mounted

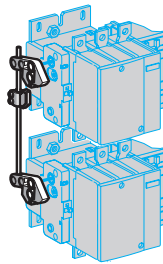
Reversers assembled using 2 contactors of identical rating, type :

- LC1 F115
- LC1 F150
- LC1 F185
- LC1 F225
- LC1 F265
- LC1 F330
- LC1 F400
- LC1 F500
- LC1 F630
- LC1 F800

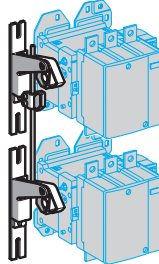
Reversers assembled using 2 contactors of different ratings, see page 5/120.

Mechanical interlocks

LA9 FF4F
LA9 FG4G

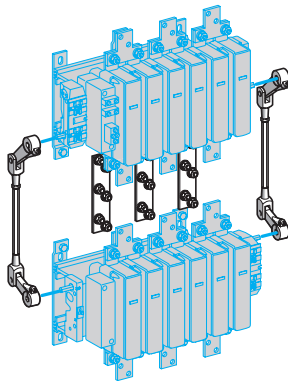


LA9 FH4H
LA9 FJ4J
LA9 FK4K
LA9 FL4L



LC1 F780

LA9 FX970



(1) For 4-pole changeover contactor pairs, see pages 5/120 and 5/121.

(2) Complete references: see page 5/119.

TeSys contactors

TeSys F reversing contactors and changeover pairs
Components for assembling 3-pole reversing contactors
and changeover contactor pairs, for customer assembly
Control circuit: a.c. or d.c.

Reversers assembled using 2 contactors of identical rating

Contactor type (1)	Set of power connections		Mechanical interlock	
	Reference	Weight kg	Kit reference	Weight kg
For assembly of 3-pole reversing contactors for motor control				
Horizontally mounted				
LC1 F115	LA9 FF976	0.600	LA9 FF970	0.060
LC1 F150	LA9 F15076	0.600	LA9 FF970	0.060
LC1 F185	LA9 FG976	0.780	LA9 FG970	0.060
LC1 F225	LA9 F22576	1.500	LA9 FG970	0.060
LC1 F265	LA9 FH976	1.500	LA9 FJ970	0.140
LC1 F330	LA9 FJ976	2.100	LA9 FJ970	0.140
LC1 F400	LA9 FJ976	2.100	LA9 FJ970	0.140
LC1 F500	LA9 FK976	2.350	LA9 FJ970	0.140
LC1 F630 or F800	LA9 FL976	3.800	LA9 FL970	0.150

Vertically mounted

LC1 F115 or F150	(2)	–	LA9 FF4F	0.345
LC1 F185	(2)	–	LA9 FG4G	0.350
LC1 F225	(2)	–	LA9 FG4G	0.350
LC1 F265 or F330	(2)	–	LA9 FH4H	1.060
LC1 F400	(2)	–	LA9 FJ4J	1.200
LC1 F500	(2)	–	LA9 FK4K	1.200
LC1 F630 or F800	(2)	–	LA9 FL4L	1.220
LC1 F780	(3)	–	LA9 FX970 (3)	6.100

For assembly of 3-pole changeover contactor pairs (4)

Horizontally mounted

LC1 F115	LA9 FF982	0.460	LA9 FF970	0.060
LC1 F150	LA9 F15082	0.460	LA9 FF970	0.060
LC1 F185	LA9 FG982	0.610	LA9 FG970	0.060
LC1 F225	LA9 F22582	1.200	LA9 FG970	0.060
LC1 F265	LA9 FH982	1.200	LA9 FJ970	0.140
LC1 F330	LA9 FJ982	1.800	LA9 FJ970	0.140
LC1 F400	LA9 FJ982	1.800	LA9 FJ970	0.140
LC1 F500	LA9 FK982	2.300	LA9 FJ970	0.140
LC1 F630 or F800	LA9 FL982	3.400	LA9 FL970	0.150

Vertically mounted

LC1 F115 or F150	(2)	–	LA9 FF4F	0.345
LC1 F185	(2)	–	LA9 FG4G	0.350
LC1 F225	(2)	–	LA9 FG4G	0.350
LC1 F265 or F330	(2)	–	LA9 FH4H	1.060
LC1 F400	(2)	–	LA9 FJ4J	1.200
LC1 F500	(2)	–	LA9 FK4K	1.200
LC1 F630 or F800	(2)	–	LA9 FL4L	1.220
LC1 F780	(3)	–	LA9 FX970 (3)	7.800

(1) To order the 2 contactors: see pages 25/114 and 5/115. For the 2 auxiliary contact blocks **LAD No1** required to obtain electrical interlocking between the 2 contactors, see page 5/123
For accessories, see pages 5/124 to 5/127

(2) With the exception of contactors **LC1 F780**, all power connections are to be made by the customer.

(3) Double mechanical interlock mechanism with 2 interlock connecting rods and 3 power connecting links.

(4) For assembly of 4-pole changeover contactor pairs, see pages 5/120 and 5/121.

TeSys contactors

TeSys F changeover contactor pairs

Components for assembling 3 and 4-pole changeover contactor pairs, for customer assembly

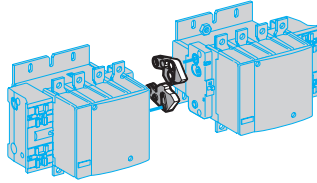
Horizontally mounted

Contactors pairs assembled using 2 contactors of identical rating, type :

- LC1 F1154
- LC1 F1504
- LC1 F1854
- LC1 F2254
- LC1 F2654
- LC1 F3304
- LC1 F4004
- LC1 F5004
- LC1 F6304

Mechanical interlocks

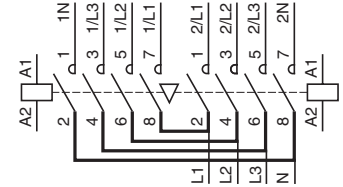
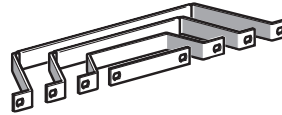
LA9 F●970



Sets of power connections

4-pole changeover contactor pairs (1)

LA9 F●●77



Vertically mounted

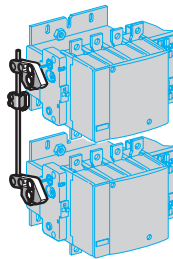
Contactors pairs assembled using 2 contactors of identical rating, type :

- LC1 F1154
- LC1 F1504
- LC1 F1854
- LC1 F2254
- LC1 F2654
- LC1 F3304
- LC1 F4004
- LC1 F5004
- LC1 F6304

Mechanical interlocks

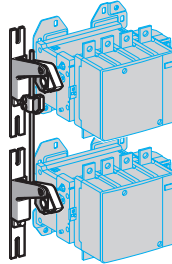
Assembly A

LA9 FF4F
LA9 FG4G



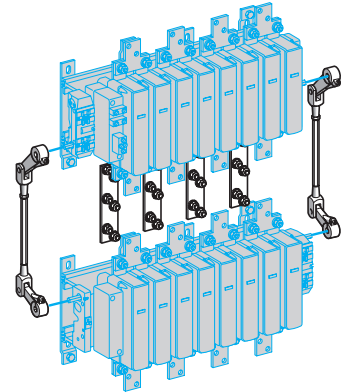
Assembly B

LA9 FH4H
LA9 FJ4J
LA9 FK4K
LA9 FL4L



Assembly C

LA9 FX971



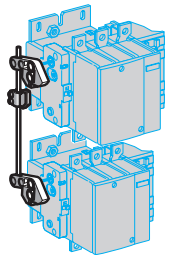
5

Contactors pairs assembled using 2 contactors of different ratings, type :

- LC1 F115 or F1154
- LC1 F150 or F1504
- LC1 F185 or F1854
- LC1 F225 or F2254
- LC1 F265 or F2654
- LC1 F330 or F3304
- LC1 F400 or F4004
- LC1 F500 or F5004
- LC1 F630 or F6304
- LC1 F800

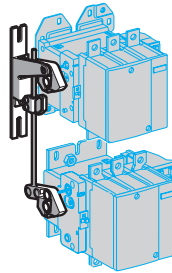
Assembly A

LA9 FG4F



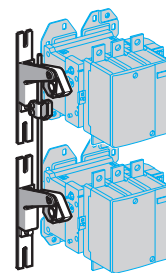
Assembly B

LA9 FH4F, LA9 FH4G
LA9 FJ4F, LA9 FJ4G
LA9 FK4F, LA9 FK4G
LA9 FL4F, LA9 FL4G



Assembly C

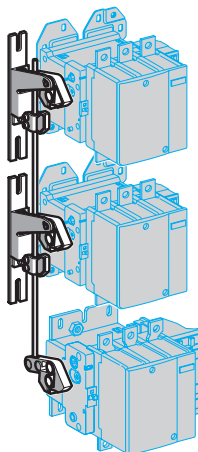
LA9 FJ4H
LA9 FK4H, LA9 FK4J
LA9 FL4H, LA9 FL4J and LA9 FL4K



Contactors pairs assembled using 3 contactors of identical or different ratings, type :

- LC1 F115 or F1154
- LC1 F150 or F1504
- LC1 F185 or F1854
- LC1 F225 or F2254
- LC1 F265 or F2654
- LC1 F330 or F3304
- LC1 F400 or F4004
- LC1 F500 or F5004
- LC1 F630 or F6304
- LC1 F800

LA9 F●4●4● : see pages 5/128 and 5/129.



Important: the contactor ratings must be in decreasing size from top to bottom.

(1) For 3-pole changeover contactor pairs, see pages 5/118 and 5/119.

TeSys contactors

TeSys F changeover contactor pairs

Components for assembling 3 and 4-pole changeover contactor pairs, for customer assembly

Control circuit: a.c. or d.c.

Contactor pairs assembled using 2 contactors of identical rating

For assembly of 4-pole changeover contactor pairs ⁽¹⁾

Contactor type (2)	Set of power connections		Mechanical interlock	
	Reference	Weight kg	Kit reference	Weight kg
Horizontally mounted				
LC1 F1154	LA9 FF977	0.460	LA9 FF970	0.060
LC1 F1504	LA9 F15077	0.460	LA9 FF970	0.060
LC1 F1854	LA9 FG977	0.610	LA9 FG970	0.060
LC1 F2254	LA9 F22577	1.200	LA9 FG970	0.060
LC1 F2654	LA9 FH977	1.200	LA9 FJ970	0.140
LC1 F3304	LA9 FJ977	1.800	LA9 FJ970	0.140
LC1 F4004	LA9 FJ977	1.800	LA9 FJ970	0.140
LC1 F5004	LA9 FK977	2.300	LA9 FJ970	0.140
LC1 F6304	LA9 FL977	3.400	LA9 FL970	0.150

Vertically mounted

LC1 F1154 or F1504	(3)	–	LA9 FF4F	0.345
LC1 F1854	(3)	–	LA9 FG4G	0.350
LC1 F2254	(3)	–	LA9 FG4G	0.350
LC1 F2654 or F3304	(3)	–	LA9 FH4H	1.060
LC1 F4004	(3)	–	LA9 FJ4J	1.200
LC1 F5004	(3)	–	LA9 FK4K	1.200
LC1 F6304	(3)	–	LA9 FL4L	1.220
LC1 F7804	(4)	–	LA9 FX971 (4)	7.800

Contactor pairs assembled using 2 contactors of different ratings

For assembly of 3 or 4-pole changeover contactor pairs

Contactor type ⁽¹⁾	Set of power connections		Mechanical interlock	
	At bottom	At top	Kit reference	Weight kg
Vertically mounted				
LC1 F115 or F1154 or LC1 F150 or F1504	LC1 F185 or F1854		LA9 FG4F	0.350
	LC1 F225 or F2254		LA9 FG4F	0.350
	LC1 F265 or F2654		LA9 FH4F	0.870
	LC1 F330 or F3304		LA9 FH4F	0.870
	LC1 F400 or F4004		LA9 FJ4F	0.930
	LC1 F500 or F5004		LA9 FK4F	0.940
	LC1 F630, F6304 or F800		LA9 FL4F	0.940
LC1 F185 or F1854 or LC1 F225 or F2254	LC1 F265 or F2654		LA9 FH4G	0.860
	LC1 F330 or F3304		LA9 FH4G	0.860
	LC1 F400 or F4004		LA9 FJ4G	0.940
	LC1 F500 or F5004		LA9 FK4G	0.940
	LC1 F630, F6304 or F800		LA9 FL4G	0.950
LC1 F265 or F2654 or LC1 F330 or F3304	LC1 F400 or F4004		LA9 FJ4H	1.130
	LC1 F500 or F5004		LA9 FK4H	1.130
	LC1 F630, F6304 or F800		LA9 FL4H	1.140
LC1 F400 or F4004	LC1 F500 or F5004		LA9 FK4J	1.200
	LC1 F630 or F6304 or F800		LA9 FL4J	1.210
LC1 F500 or F5004	LC1 F630 or F6304 or F800		LA9 FL4K	1.210

For assembly of reversers using 3 contactors, vertically mounted

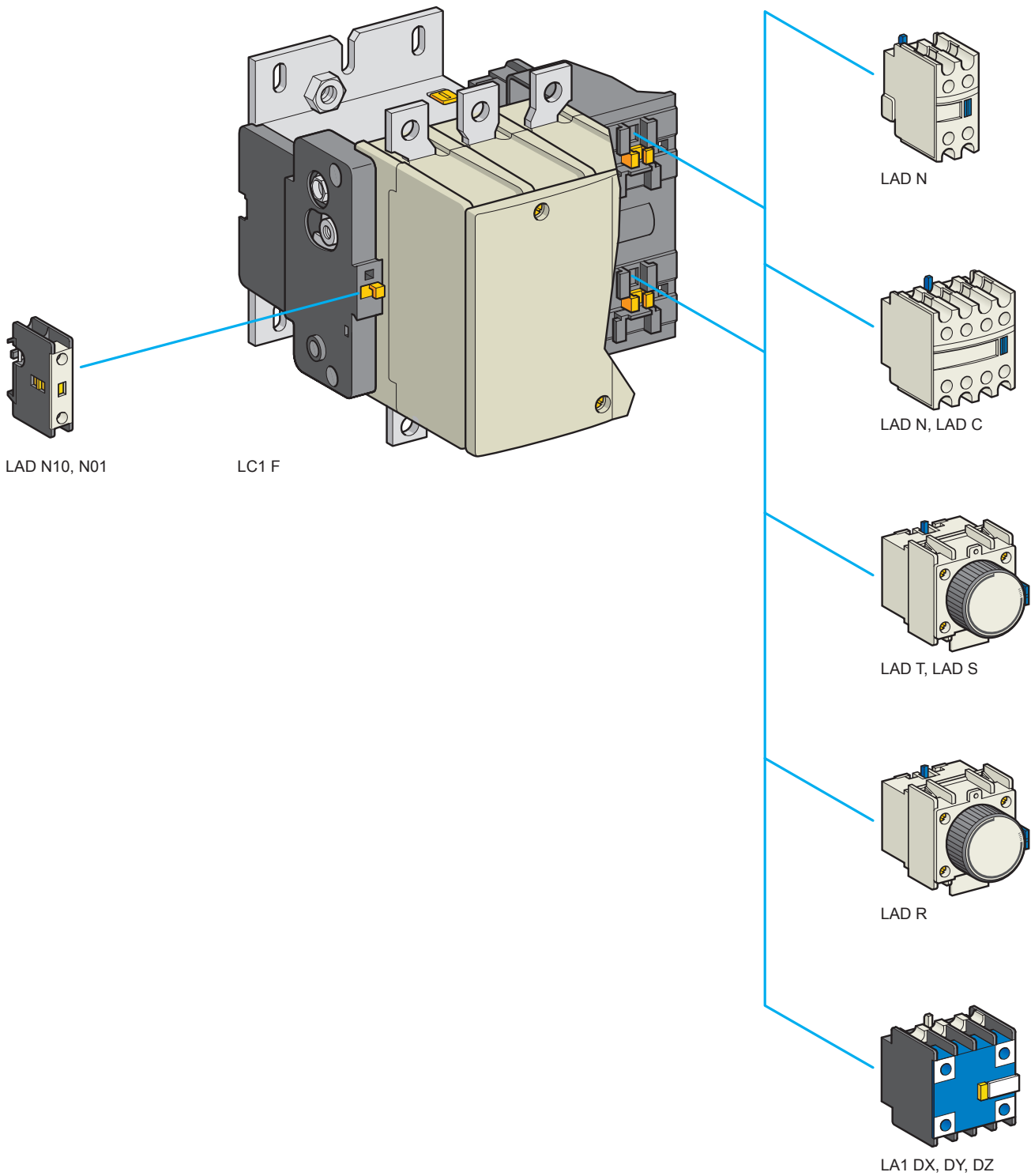
See pages 5/128 and 5/129.

(1) For assembly of 3-pole changeover contactor pairs, see pages 5/118 and 5/120.

(2) To order the 2 contactors: see pages 5/114 and 5/115. For the 2 auxiliary contact blocks **LAD No1** required to obtain electrical interlocking between the 2 contactors, see page 5/123. For accessories, see pages 5/124 to 5/127.





(3) All power connections are to be made by the customer.

(4) Double mechanical interlock mechanism with 2 interlock connecting rods and 4 power connecting links.



Instantaneous auxiliary contact blocks

For use in normal operating environments

Number of contacts	Maximum number of blocks per contactor Clip-on mounting	Composition				Reference	Weight kg
							
1	1	-	-	1	-	LAD N10	0.020
		-	-	-	1	LAD N01	0.020
2	2	-	-	1	1	LAD N11	0.030
		-	-	2	-	LAD N20	0.030
		-	-	-	2	LAD N02	0.030
4	2	-	-	2	2	LAD N22	0.050
		-	-	1	3	LAD N13	0.050
		-	-	4	-	LAD N40	0.050
		-	-	-	4	LAD N04	0.050
		-	-	3	1	LAD N31	0.050
		-	-	2	2 (1)	LAD C22	0.050

With terminal referencing conforming to EN 50012





2	2	-	-	1	1	LAD N11P	0.030
		-	-	1	1	LAD N11G	0.030
4	2	-	-	2	2	LAD N22P	0.050
		-	-	2	2	LAD N22G	0.050

Instantaneous auxiliary contact blocks for connection by lugs

This type of connection is not possible for blocks with 1 contact or blocks with dust and damp protected contacts. For all other instantaneous auxiliary contact blocks, add the figure 6 to the end of the references selected above. Example: LAD N11 becomes LAD N116.

Instantaneous auxiliary contact blocks with dust and damp protected contacts

Recommended for use in particularly harsh industrial environments

Number of contacts	Maximum number of blocks per contactor Clip-on mounting	Composition				Reference	Weight kg
							
2	2	2	-	-	-	LA1 DX20	0.040
		2	2 (2)	-	-	LA1 DY20	0.040
4	2	2	-	2	-	LA1 DZ40	0.050
		2	-	1	1	LA1 DZ31	0.050

Time delay auxiliary contact blocks

Number of contacts	Maximum number of blocks per contactor Clip-on mounting	Time delay		Reference	Weight kg
		Type	Range		
			s		
1 N/O + 1 N/C	2	On-delay	0.1...3 (3)	LAD T0	0.060
			0.1...30	LAD T2	0.060
		Off-delay	10...180	LAD T4	0.060
			1...30 (4)	LAD S2	0.060
		Off-delay	0.1...3 (3)	LAD R0	0.060
			0.1...30	LAD R2	0.060
			10...180	LAD R4	0.060

Interface for PLC control

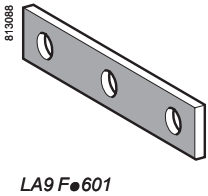
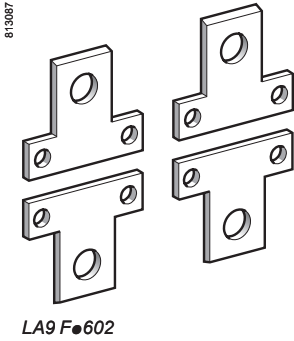
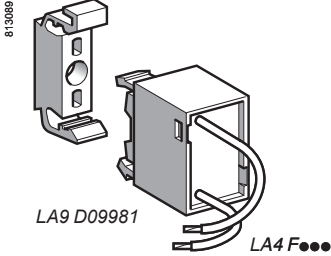
Type of I/O	Reference	Weight kg
Inputs: $\bar{\bar{}}$ 24 V - 100 mA Outputs: \sim 480 V - 25 A	LA4 FSRE ▲	-

(1) Including 1 N/O + 1 N/C make before break

(2) Device fitted with 4 earth screen continuity terminals.

(3) With extended scale from 0.1 to 0.6 s.

(4) With switching time of 40 ms \pm 15 ms between opening of the N/C contact and closing of the N/O contact.▲ Available 2nd half 2009.



Suppressor blocks

RC circuits (resistor-capacitor)

- Effective protection for circuits highly sensitive to "high frequency" interference. For use only in cases where the voltage is virtually sinusoidal, i.e. less than 5% total harmonic distortion.
- Voltage limited to 3 Uc max. and oscillating frequency limited to 400 Hz max.
- Slight increase in drop-out time (1.1 to 1.3 times the normal time).

Mounting	Uc		Reference	Weight kg
Clip-on mounting on all ratings and all a.c. coils.	~	24...48 V	LA4 FRCE	0.040
		50...110 V	LA4 FRCF	0.040
		127...240 V	LA4 FRCP	0.040
		265...415 V	LA4 FRCV	0.040

Suppressor block bracket	LA9 D09981	0.010
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Varistors (peak limiting)

- Protection provided by limiting the transient voltage to 2 Uc max.
- Maximum reduction of transient voltage peaks.

Mounting	Uc		Reference	Weight kg
Clip-on mounting on all ratings and all coils.	~ or ---	24...48 V	LA4 FVE	0.040
		50...110 V	LA4 FVF	0.040
		127...240 V	LA4 FVP	0.040
		265...415 V	LA4 FVV	0.040

Diodes

- No overvoltage or oscillating frequencies.
- Increase in drop-out time (3 to 4 times the normal time).
- Polarised component.

Mounting	Uc		Reference	Weight kg
Clip-on mounting on all ratings and all d.c. coils.	---	24...48 V	LA4 FDE	0.040
		55...110 V	LA4 FDF	0.040
		125...250 V	LA4 FDP	0.040
		280...440 V	LA4 FDV	0.040

Bidirectional peak limiting diodes (transil)

- Protection provided by limiting the transient voltage to between 2 and 2.5 times Uc max.
- Maximum reduction of transient voltage peaks.

Mounting	Uc		Reference	Weight kg
Clip-on mounting on all ratings and all coils.	~ or ---	24...48 V	LA4 FTE	0.040
		50...110 V	LA4 FTF	0.040
		127...240 V	LA4 FTP	0.040
		265...415 V	LA4 FTV	0.040

Connection accessories

For use on 4-pole contactors	Set of 4 links	Weight kg
	Set reference	

Links for parallel connection of poles (in pairs)

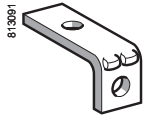
LC1 F1154	LA9 FF602	0.200
LC1 F1504, F1854	LA9 FG602	0.350
LC1 F2254, F2654, F3304, F4004	LA9 FH602	1.000
LC1 F5004	LA9 FK602	1.750
LC1 F6304	LA9 FL602	3.000

Links for "star" connection of 3 poles

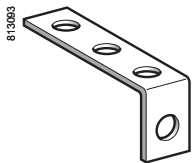
LC1 F115	LA9 FF601	0.035
LC1 F150, F185	LA9 FG601	0.050
LC1 F225, F265, F330, F400	LA9 FH601	0.120
LC1 F500	LA9 FK601	0.180
LC1 F630, F800	LA9 FL601	0.550

Control circuit voltage take-off from power terminals

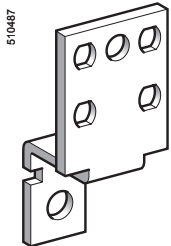
For use with contactors	Mounted on bolt size	Sold in lots of	Unit reference	Weight kg
LC1 F115	M6	10	DZ3 FA3	0.004
LC1 F150, F185	M8	10	DZ3 GA3	0.004
LC1 F225...F500	M10	10	DZ3 HA3	0.006
LC1 F630, F800	M12	10	DZ3 JA3	0.009



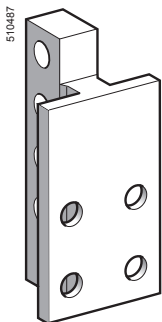
LA9 F981



LA9 F979



LA9 FL980



LA9 F2100

Right-angled connectors

For contactors or thermal overload relays

For use with		With connector plates		Set of 3 connectors	
Contactors	Thermal overload relays (1)	Width	Type	Set reference	Weight kg
LC1 F115	LR9 F5●67, LR9 F67	15 mm	Rear	LA9 FF981	0.060
			Side	LA9 FF979	0.240
			Large surface area	LA9 FF980	0.150
LC1 F150, F185	LR9 F5●69, F5●71, LR9 F69, F71	20 mm	Rear	LA9 FG981	0.080
			Side	LA9 FG979	0.350
			Large surface area	LA9 FG980	0.200
LC1 F225, F265, F330, F400	LR9 F7●75, LR9 F75	25 mm	Rear	LA9 FJ981	0.430
			Side	LA9 FJ979	0.750
			Large surface area	LA9 FJ980	0.490
LC1 F500	LR9 F7●79, F7●81, LR9 F79, F81	30 mm	Rear	LA9 FK981	0.480
			Side	LA9 FK979	0.920
			Large surface area	LA9 FK980	0.800
LC1 F630, F800	LR9 F7●81, LR9 F81	40 mm	Rear	LA9 FL981	1.210
			Side	LA9 FL979	2.570
			Large surface area	LA9 FL980	3.190
For use with		With connector plates	Set of 6 connectors		
Contactors	Thermal overload relays (1)	Width	Type	Set reference	Weight kg
LC1 F1700, F2100	–	60 mm	Rear	LA9 F2100	9.550

Connection accessories

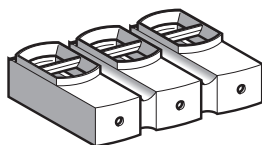
For reversing contactors or "star-delta" contactors combined with a thermal overload relay

For use with		Width of connector plates	Set of 3 busbars	
Contactors	Thermal overload relays (1)		Set reference	Weight kg
LC1 F115	LR9 F5●57, F5●63 LR9 F5●67, F5●69 LR9 F69, F71	15 mm	LA7 F401	0.110
LC1 F150 and F185	LR9 F5●57, F5●63	20 mm	LA7 F402	0.110
LC1 F185	LR9 F5●71, LR9 F71	25 mm	LA7 F407	0.160
LC1 F225 and F265	LR9 F5●71, LR9 F71	25 mm	LA7 F403	0.160
	LR9 F7●75, F7●79 LR9 F75, F79	25 mm	LA7 F404	0.160
LC1 F330 and F400	LR9 F7●75, F7●79 LR9 F75, F79	25 mm	LA7 F404	0.160
LC1 F400	LR9 F7●81, LR9 F81	25 mm	LA7 F404	0.160
LC1 F500	LR9 F7●75, F7●79 LR9 F7●81 LR9 F75, F79, F81	30 mm	LA7 F405	0.270
LC1 F630, F800	LR9 F7●81, LR9 F81	40 mm	LA7 F406	0.600

(1) For protection relays class 10, replace the ● with a 3 and for class 20, replace the ● with a 5.

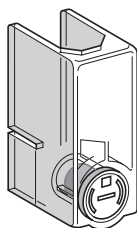


813094



LA9 F103

813095



LA9 F701

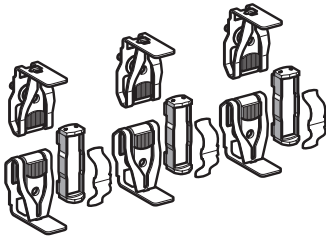
Insulated terminal blocks

For use on 3-pole contactors	Connection	Tightening tool	Set of 2 blocks Set reference	Weight kg
LC1 F115, F150, F185	1 x 16...150 mm ² or 2 x 16...95 mm ²	4 mm hexagonal socket key	LA9 F103	0.560

Power terminal protection shrouds

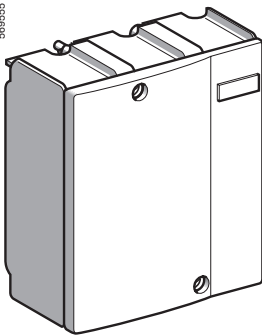
For use on 2, 3 and 4-pole contactors	Number of shrouds per set	Set reference	Weight kg
LC1 F115	6	LA9 F701	0.250
LC1 F150, F185	6	LA9 F702	0.250
LC1 F225, F265, F330, F400 and F4002 F500 and F5002	6	LA9 F703	0.250
LC1 F630, F6302 and F800	6	LA9 F704	0.250
LC1 F1154	8	LA9 F706	0.300
LC1 F1504 and F1854	8	LA9 F707	0.300
LC1 F2254, F2654, F3304, F4004, F5004	8	LA9 F708	0.300
LC1 F6304	8	LA9 F709	0.300

613096



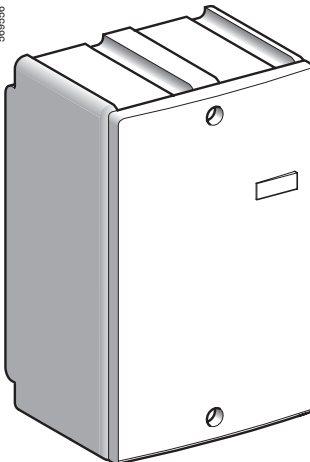
LA5 FG431

569555



LA5 F40050

569556



LA5 F210050

Sets of contacts

Per pole: 2 fixed contacts, 1 moving contact, 2 deflectors, 1 back-plate, clamping screws and washers.

For contactor	Type	Replacement for	Reference	Weight kg
2-pole	LC1 F4002	2 poles	LA5 F400802	1.350
	LC1 F5002	2 poles	LA5 F500802	1.950
	LC1 F6302	2 poles	LA5 F630802	4.700
	LC1 F6302S011	2 poles	LA5 F630802S011	4.800
3-pole	LC1 F115. F150	3 poles	LA5 FF431	0.270
	LC1 F185. F225	3 poles	LA5 FG431	0.350
	LC1 F265	3 poles	LA5 FH431	0.660
	LC1 F330. F400	3 poles	LA5 F400803	2.000
	LC1 F500	3 poles	LA5 F500803	2.950
	LC1 F630	3 poles	LA5 F630803	6.100
	LC1 F780	1 pole	LA5 F780801 (1)	4.700
		3 poles	LA5 F780803	13.200
	LC1 F800	3 poles	LA5 F800803	6.100
	LC1 F630S011	3 poles	LA5 F630803S011	6.200
4-pole	LC1 F1504. F1154	4 poles	LA5 FF441	0.360
	LC1 F1854. F2254	4 poles	LA5 FG441	0.465
	LC1 F2654	4 poles	LA5 FH441	0.880
	LC1 F3304. F4004	4 poles	LA5 F400804	2.700
	LC1 F5004	4 poles	LA5 F500804	3.900
	LC1 F6304	4 poles	LA5 F630804	8.150
	LC1 F7804	1 pole	LA5 F780801 (1)	4.700
		4 poles	LA5 F780804	17.300
	LC1 F6304S011	4 poles	LA5 F630804S011	8.400

Arc chambers

For contactor	Type	Replacement for	Reference	Weight kg
2-pole	LC1 F4002	2 poles	LA5 F400250	0.870
	LC1 F5002	2 poles	LA5 F500250	1.250
	LC1 F6302	2 poles	LA5 F630250	2.100
	LC1 F6302S011	2 poles	LA5 F630250	2.100
3-pole	LC1 F115	3 poles	LA5 F11550	0.490
	LC1 F150	3 poles	LA5 F15050	0.490
	LC1 F185	3 poles	LA5 F18550	0.670
	LC1 F225	3 poles	LA5 F22550	0.670
	LC1 F265	3 poles	LA5 F26550	0.920
	LC1 F330	3 poles	LA5 F33050	1.300
	LC1 F400	3 poles	LA5 F40050	1.300
	LC1 F500	3 poles	LA5 F50050	1.850
	LC1 F630	3 poles	LA5 F63050	3.150
	LC1 F780	1 pole	LA5 F780150 (1)	2.100
	LC1 F800	3 poles	LA5 F80050	3.150
	LC1 F630S011	3 poles	LA5 F63050	3.150
	LC1 F1700	6 poles	LA5 F170050 (2)	3.750
	LC1 F2100	6 poles	LA5 F210050 (2)	3.750
4-pole	LC1 F1154	4 poles	LA5 F115450	0.660
	LC1 F1504	4 poles	LA5 F150450	0.660
	LC1 F1854	4 poles	LA5 F185450	0.910
	LC1 F2254	4 poles	LA5 F225450	1.000
	LC1 F2654	4 poles	LA5 F265450	1.220
	LC1 F3304	4 poles	LA5 F330450	1.740
	LC1 F4004	4 poles	LA5 F400450 (3)	1.740
	LC1 F5004	4 poles	LA5 F500450 (3)	2.500
	LC1 F6304	4 poles	LA5 F630450 (4)	4.200
	LC1 F7804	1 pole	LA5 F780150 (1)	2.100
LC1 F6304S011	4 poles	LA5 F630450	4.200	

(1) Comprising 2 identical items per pole.

(2) Comprising three 2-pole arc chambers.

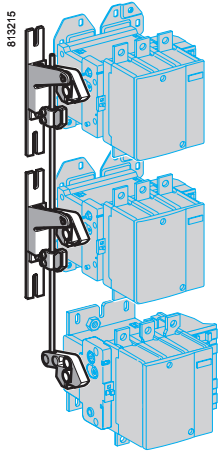
(3) Comprising two 2-pole arc chambers.

(4) Comprising single-pole arc chambers.

TeSys contactors

TeSys F contactors

Accessories for assembly of reversing contactors and changeover contactor pairs using 3 contactors, vertically mounted - for customer assembly



LA9 F●4●4●

Closing of one of the 3 contactors prevents closing of the other 2.

Mechanical interlock kits

Contactor type (1)			Mechanical interlock (2)		
Top	Middle	Bottom	Kit reference (3)	Weight kg	
LC1 F115, F150, F1154 or F1504	LC1 F115, F150, F1154 or F1504	LC1 F115, F150, F1154 or F1504	LA9 FF4F4F	0.554	
LC1 F185, F225, F1854 or F2254	LC1 F115, F150, F1154 or F1504	LC1 F115, F150, F1154 or F1504	LA9 FG4F4F	0.559	
	LC1 F185, F225, F1854 or F2254	LC1 F115, F150, F1154 or F1504	LA9 FG4G4F	0.559	
LC1 F265, F330, F2654 or F3304	LC1 F115, F150, F1154 or F1504	LC1 F115, F150, F1154 or F1504	LA9 FH4F4F	1.350	
		LC1 F185, F225, F1854 or F2254	LA9 FH4G4F	1.375	
	LC1 F265, F330, F2654 or F3304	LC1 F115, F150, F1154 or F1504	LC1 F115, F150, F1154 or F1504	LA9 FH4H4F	1.524
		LC1 F185, F225, F1854 or F2254	LC1 F185, F225, F1854 or F2254	LA9 FH4G4G	1.375
LC1 F400, F4002 or F4004	LC1 F115, F150, F1154 or F1504	LC1 F115, F150, F1154 or F1504	LA9 FJ4F4F	1.421	
		LC1 F185, F225, F1854 or F2254	LA9 FJ4G4F	1.424	
	LC1 F265, F330, F2654 or F3304	LC1 F115, F150, F1154 or F1504	LC1 F115, F150, F1154 or F1504	LA9 FJ4H4F	1.595
			LC1 F185, F225, F1854 or F2254	LA9 FJ4H4G	1.598
		LC1 F265, F330, F2654 or F3304	LC1 F185, F225, F1854 or F2254	LA9 FJ4H4H	1.755
			LC1 F265, F330, F2654 or F3304	LC1 F265, F330, F2654 or F3304	LA9 FJ4H4H
	LC1 F400, F4002 or F4004	LC1 F115, F150, F1154 or F1504	LC1 F115, F150, F1154 or F1504	LA9 FJ4J4F	1.666
			LC1 F185, F225, F1854 or F2254	LA9 FJ4J4G	1.669
		LC1 F265, F330, F2654 or F3304	LC1 F265, F330, F2654 or F3304	LA9 FJ4J4H	1.829
			LC1-F400, F4002 or F4004	LC1-F400, F4002 or F4004	LA9 FJ4J4J
LC1 F500, F5002 or F5004 (continued on page 5/129)	LC1 F115, F150, F1154 or F1504	LC1 F115, F150, F1154 or F1504	LA9 FK4F4F	1.421	
		LC1 F185, F225, F1854 or F2254	LA9 FK4G4F	1.424	
	LC1 F265, F330, F2654 or F3304	LC1 F115, F150, F1154 or F1504	LC1 F115, F150, F1154 or F1504	LA9 FK4G4G	1.428
			LC1 F185, F225, F1854 or F2254	LA9 FK4H4F	1.595
		LC1 F265, F330, F2654 or F3304	LC1 F185, F225, F1854 or F2254	LA9 FK4H4G	1.598
			LC1 F265, F330, F2654 or F3304	LC1 F265, F330, F2654 or F3304	LA9 FK4H4H
	LC1 F400, F4002 or F4004	LC1 F115, F150, F1154 or F1504	LC1 F115, F150, F1154 or F1504	LA9 FK4J4F	1.666
			LC1 F185, F225, F1854 or F2254	LA9 FK4J4G	1.669
		LC1 F265, F330, F2654 or F3304	LC1 F265, F330, F2654 or F3304	LA9 FK4J4H	1.829
			LC1 F400, F4002 or F4004	LC1 F400, F4002 or F4004	LA9 FK4J4J
LC1 F500, F5002 or F5004	LC1 F115, F150, F1154 or F1504	LC1 F115, F150, F1154 or F1504	LA9 FK4K4F	1.666	

(1) To order the 3 contactors, see pages 5/114 and 5/115. For auxiliary contact blocks **LAD N02** used for electrical locking, see page 5/123. For accessories, see pages 5/124 to 5/127.

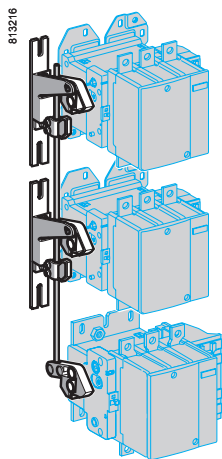
(2) Minimum distances between contactors, see page 5/129.

(3) The kit contains the lever arms, the 2 x Ø 8 mm rods and all parts required for assembly.

TeSys contactors

TeSys F contactors

Accessories for assembly of reversing contactors and changeover contactor pairs using 3 contactors, vertically mounted - for customer assembly



LA9 F444

Mechanical interlock kits (continued)

Contactor type (1)			Mechanical interlock (2)		
Top	Middle	Bottom	Kit reference (3)	Weight kg	
LC1 F500, F5002 or F5004 (continued)	LC1 F500, F5002 or F5004	LC1 F185, F225, F1854 or F2254	LA9 FK4K4G	1.669	
		LC1 F265, F330, F2654 or F3304	LA9 FK4K4H	1.825	
		LC1 F400, F4002 or F4004	LA9 FK4K4J	1.896	
		LC1-F500, F5002 or F5004	LA9 FK4K4K	1.896	
LC1 F630, F800, F6302 or F6304	LC1 F115, F150, F1154 or F1504	LC1 F115, F150, F1154 or F1504	LA9 FL4F4F	1.428	
		LC1 F185, F225, F1854 or F2254	LA9 FL4G4F	1.431	
		LC1 F185, F225, F1854 or F2254	LA9 FL4G4G	1.436	
	LC1 F265, F330, F2654 or F3304	LC1 F115, F150, F1154 or F1504	LA9 FL4H4F	1.602	
		LC1 F185, F225, F1854 or F2254	LA9 FL4H4G	1.606	
		LC1 F265, F330, F2654 or F3304	LA9 FL4H4H	1.751	
	LC1 F400, F4002 or F4004	LC1 F115, F150, F1154 or F1504	LC1 F115, F150, F1154 or F1504	LA9 FL4J4F	1.673
			LC1 F185, F225, F1854 or F2254	LA9 FL4J4G	1.676
			LC1 F265, F330, F2654 or F3304	LA9 FL4J4H	1.832
			LC1 F400, F4002 or F4004	LA9 FL4J4J	1.903
	LC1-F500, F5002 or F5004	LC1 F115, F150, F1154 or F1504	LC1 F115, F150, F1154 or F1504	LA9 FK4K4F	1.666
			LC1 F185, F225, F1854 or F2254	LA9 FK4K4G	1.669
LC1 F265, F330, F2654 or F3304			LA9 FK4K4H	1.825	
LC1 F400, F4002 or F4004			LA9 FK4K4J	1.896	
LC1-F500, F5002 or F5004			LA9 FK4K4K	1.896	
LC1 F630, F800, F6302 or F6304			LC1 F115, F150, F1154 or F1504	LC1 F115, F150, F1154 or F1504	LA9 FL4L4F
	LC1 F185, F225, F1854 or F2254	LA9 FL4L4G		1.683	
	LC1 F265, F330, F2654 or F3304	LA9 FL4L4H		1.910	
	LC1 F400, F4002 or F4004	LA9 FL4L4J		1.896	
	LC1 F500, F5002 or F5004	LA9 FL4L4K		1.896	
	LC1 F630, F800, F6302, or F6304	LA9 FL4L4L		1.920	

(1) To order the 3 contactors, see pages 5/114 and 5/115. For auxiliary contact blocks **LAD N02** used for electrical locking, see page 5/123. For accessories, see pages 5/124 to 5/127.

(2) Minimum distances between contactors.

This is the distance, in mm, between the centres of two adjacent contactors (between the top and middle contactors or between the middle and bottom contactors).

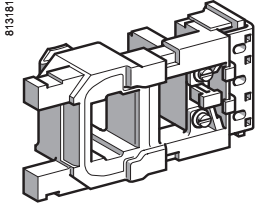
Contactor Bottom or top	Middle					
	LC1 F115 or F150	LC1 F185 or F225	LC1 F265 or F330	LC1 F400	LC1 F500	LC1 F630 or F800
LC1 F115 or F150	200	210	240	250	270	320
LC1 F185 or F225	210	220	250	250	270	330
LC1 F265 or F330	240	250	250	260	280	350
LC1 F400	250	250	260	260	280	320
LC1 F500	270	270	280	280	300	340
LC1 F630 or F800	320	330	350	320	340	380

(3) The kit contains the lever arms, the 2 x Ø 8 mm rods and all parts required for assembly.

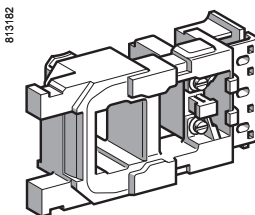
TeSys contactors

TeSys F contactors

a.c. 50/60 Hz supply coils



LX1 FF●●●



LX1 FG●●●

References

Maximum ambient air temperature: 55 °C. Above this, use an LX9 F coil, see page 5/135.
 Operating cycles/hour ($\theta \leq 55\text{ °C}$): ≤ 2400 .

Control circuit voltage	Average resistance at 20 °C ± 10 %		Inductance of closed circuit	Voltage code	Reference	Weight
	Uc - 50 Hz	Uc - 60 Hz				
V	V	Ω	H			kg
For contactors LC1 F115 and LC1 F150						
24	–	0.27	0.04	B5	LX1 FF024	0.430
42	–	0.94	0.13	D5	LX1 FF042	0.430
–	48	0.78	0.11	E6	LX1 FF040	0.430
48	–	1.17	0.16	E5	LX1 FF048	0.430
–	110	4.55	0.59	F6	LX1 FF092	0.430
–	120	4.77	0.64	G6	LX1 FF095	0.430
110	–	6.38	0.86	F5	LX1 FF110	0.430
115	–	6.38	0.86	FE5	LX1 FF110	0.430
127/132	–	9.14	1.15	G5	LX1 FF127	0.430
–	200/208	14.5	1.87	L6	LX1 FF162	0.430
–	220	18.4	2.38	M6	LX1 FF184	0.430
–	240	18.9	2.5	U6	LX1 FF187	0.430
220	265/277	28.1	3.44	M5	LX1 FF220	0.430
230	–	28.1	3.44	P5	LX1 FF220	0.430
240	–	31.1	4.1	U5	LX1 FF240	0.430
–	380	57.2	7.05	Q6	LX1 FF316	0.430
–	440	72.6	9.21	R6	LX1 FF360	0.430
380	460/480	86.9	10.3	Q5	LX1 FF380	0.430
400	–	86.9	10.3	V5	LX1 FF380	0.430
415	–	95.1	12	N5	LX1 FF415	0.430
500	–	141	17	S5	LX1 FF500	0.430
–	660	172	20.3	Y6	LX1 FF550	0.430
660/690	–	254	28.9	Y5	LX1 FF660	0.430
–	1000	414	48.9	–	LX1 FF850	0.430
1000	–	610	68.5	–	LX1 FF1000	0.430

Specifications

Average consumption at 20 °C:
 - inrush 50Hz: 550VA; 60Hz: 660 VA,
 - sealed 50Hz: 45VA; 60 Hz: 55 VA, $\cos \varphi = 0.3$.
 Heat dissipation: 12...16 W.
 Operating time at Uc: closing = 23...35 ms, opening = 5...15 ms.

For contactors LC1 F185 and LC1 F225						
Control circuit voltage	Average resistance at 20 °C ± 10 %		Inductance of closed circuit	Voltage code	Reference	Weight
Uc - 50 Hz	Uc - 60 Hz					
V	V	Ω	H			kg
24	–	0.18	0.03	B5	LX1 FG024	0.550
42	–	0.57	0.09	–	LX1 FG042	0.550
–	48	0.47	0.08	E6	LX1 FG040	0.550
48	–	0.71	0.12	E5	LX1 FG048	0.550
–	110	2.74	0.44	F6	LX1 FG092	0.550
–	115/120	2.87	0.49	G6	LX1 FG095	0.550
110	–	4.18	0.65	F5	LX1 FG110	0.550
115	–	4.18	0.65	FE5	LX1 FG110	0.550
127/132	–	5.35	0.86	G5	LX1 FG127	0.550
–	200/208	8.8	1.41	L6	LX1 FG162	0.550
–	220	11.1	1.8	M6	LX1 FG184	0.550
–	240	11.4	1.87	U6	LX1 FG187	0.550
220	265/277	16.5	2.59	M5	LX1 FG220	0.550
230	–	16.5	2.59	P5	LX1 FG220	0.550
240	–	20.1	3.09	U5	LX1 FG240	0.550
–	380	34	5.32	Q6	LX1 FG316	0.550
–	440	43.5	6.94	R6	LX1 FG360	0.550
380	460/480	51.3	7.75	Q5	LX1 FG380	0.550
400	–	51.3	7.75	V5	LX1 FG380	0.550
415	–	62.3	9.06	N5	LX1 FG415	0.550
500	–	82.7	12.8	S5	LX1 FG500	0.550
–	660	103	15.3	Y6	LX1 FG550	0.550
660/690	–	154	21.8	Y5	LX1 FG660	0.550
–	1000	249	36.6	–	LX1 FG850	0.550
1000	–	370	51.6	–	LX1 FG1000	0.550

Specifications

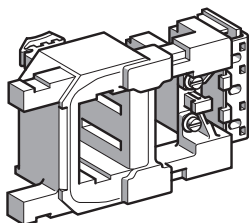
Average consumption at 20 °C:
 - inrush 50 Hz: 805 VA; 60 Hz: 970 VA,
 - sealed 50 Hz: 55 VA; 60 Hz: 66 VA, $\cos \varphi = 0.3$.
 Heat dissipation: 18...24 W.
 Operating time at Uc: closing = 20...35 ms, opening = 7...15 ms.

TeSys contactors

TeSys F contactors

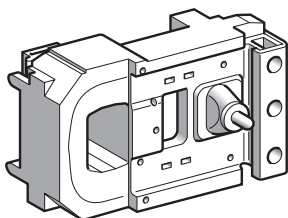
a.c. 40 to 400 Hz supply coils

813183



LX1 FH●●●2

813184



LX1 FJ●●●

References

Low sealed consumption.

Operate on networks with harmonic numbers ≤ 7 .

Operating cycles/hour ($0 \leq 55^\circ\text{C}$): ≤ 2400 .

Control circuit voltage U_c	Average resistance at $20^\circ\text{C} \pm 10\%$		Inductance of closed circuit	Voltage code	Reference	Weight
	Inrush	Sealed				
V	Ω	Ω	H			kg
For contactors LC1 F265 and LC1 F330						
24	0.8	20	(1)	B7	LX1 FH0242	0.750
48	2.96	67	(1)	E7	LX1 FH0482	0.750
110	18.7	440	(1)	F7	LX1 FH1102	0.750
115	18.7	440	(1)	FE7	LX1 FH1102	0.750
120/127	22.9	536	(1)	G7	LX1 FH1272	0.750
200/208	58.4	1366	(1)	L7	LX1 FH2002	0.750
220	70.6	1578	(1)	M7	LX1 FH2202	0.750
230	70.6	1578	(1)	P7	LX1 FH2202	0.750
240	87.94	1968	(1)	U7	LX1 FH2402	0.750
277	113	2444	(1)	W7	LX1 FH2772	0.750
380	217	4631	(1)	Q7	LX1 FH3802	0.750
400	217	4631	(1)	V7	LX1 FH3802	0.750
415	217	4631	(1)	N7	LX1-FH3802	0.750
440	265	6731	(1)	R7	LX1 FH4402	0.750
480/500	329	8543	(1)	S7	LX1 FH5002	0.750
600/660	296	10 245	(1)	X7	LX1 FH6002	0.750
1000	696	25 880	(1)	-	LX1 FH10002	0.750

Specifications

Average consumption at 20°C for 50 or 60 Hz and $\cos \varphi = 0.9$:

- inrush: 600...700 VA,

- sealed: 8...10 VA.

Heat dissipation: 8 W.

Operating time at U_c : closing = 40...65 ms, opening = 100...170 ms.

For contactor LC1 F400

48	1.6	29.5	0.18	E7	LX1 FJ048	1.000
110/120	9.8	230	1.35	F7	LX1 FJ110	1.000
115	9.8	230	1.35	FE7	LX1 FJ110	1.000
120/127	12.8	280	1.75	G7	LX1 FJ127	1.000
200/208	30	815	4.1	L7	LX1 FJ200	1.000
220	37	1030	5.1	M7	LX1 FJ220	1.000
230	37	1030	5.1	P7	LX1 FJ220	1.000
240	47.5	1320	6.4	U7	LX1 FJ240	1.000
265/277	61	1700	8.1	W7	LX1 FJ280	1.000
380	120	3310	15.8	Q7	LX1 FJ380	1.000
400	120	3310	15.8	V7	LX1 FJ380	1.000
415	145	4070	19.4	N7	LX1 FJ415	1.000
440	145	4070	19.4	R7	LX1 FJ415	1.000
500	190	4980	25.5	S7	LX1 FJ500	1.000
550/600	243	6310	27.4	X7	LX1 FJ600	1.000
1000	720	19 420	84.6	-	LX1 FJ1000	1.000

Specifications

Average consumption at 20°C for 50 or 60 Hz and $\cos \varphi = 0.9$:

- inrush: 1000...1150 VA,

- sealed: 12...18 VA.

Heat dissipation: 14 W.

Operating time at U_c : closing = 40...75 ms, opening = 100...170.

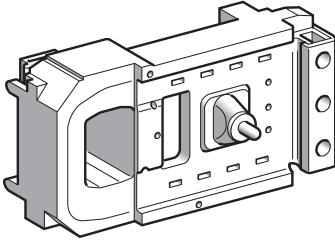
(1) Please consult your Regional Sales Office.

TeSys contactors

TeSys F contactors

a.c. 40 to 400 Hz supply coils

813186



LX1 FK●●●

References (continued)

Low sealed consumption.

Operate on networks with harmonic numbers ≤ 7 .

Control circuit voltage U _c	Average resistance at 20 °C ± 10 %		Inductance of closed circuit	Voltage code	Reference	Weight
	Inrush	Sealed				
V	Ω	Ω	H			kg
For contactor LC1 F500						
48	1.9	33.5	0.19	E7	LX1 FK048	1.150
110/120	9.55	260	1.25	F7	LX1 FK110	1.150
115	9.55	260	1.25	FE7	LX1 FK110	1.150
120/127	11.5	315	1.5	G7	LX1 FK127	1.150
200/208	29	735	3.75	L7	LX1 FK200	1.150
220	35.5	915	4.55	M7	LX1 FK220	1.150
230	35.5	915	4.55	P7	LX1 FK220	1.150
240	44.5	1160	5.75	U7	LX1 FK240	1.150
265/277	56.5	1490	7.3	W7	LX1 FK280	1.150
380	112	2980	14.7	Q7	LX1 FK380	1.150
400	112	2980	14.7	V7	LX1 FK380	1.150
415	143	3730	18.4	N7	LX1 FK415	1.150
440	143	3730	18.4	R7	LX1 FK415	1.150
500	172	4590	22.8	S7	LX1 FK500	1.150
550/600	232	5660	23.9	X7	LX1 FK600	1.150
1000	679	16 960	72	–	LX1 FK1000	1.150

Specifications

Average consumption at 20 °C for 50 or 60 Hz, $\cos \varphi = 0.9$:

- inrush: 1050...1150 VA,

- sealed: 16...20 VA.

Operating cycles/hour ($\theta \leq 55$ °C): ≤ 2400 .

Heat dissipation: 18 W.

Operating time at U_c: closing = 40...75 ms, opening = 100...170 ms.

For contactor LC1 F630

48	1.1	17.1	0.09	E7	LX1 FL048	1.500
110/120	6.45	165	1.85	F7	LX1 FL110	1.500
115	6.45	165	1.85	FE7	LX1 FL110	1.500
127	8.1	205	1.05	G7	LX1 FL127	1.500
200/208	20.5	605	2.65	L7	LX1 FL200	1.500
220	25.5	730	3.35	M7	LX1 FL220	1.500
230	25.5	730	3.35	P7	LX1 FL220	1.500
240	25.5	730	3.35	U7	LX1 FL220	1.500
265/277	31	900	4.1	W7	LX1 FL260	1.500
380	78	2360	10.5	Q7	LX1 FL380	1.500
400	78	2360	10.5	V7	LX1 FL380	1.500
415	96	2960	13	N7	LX1 FL415	1.500
440	96	2960	13	R7	LX1 FL415	1.500
500	120	3660	16.5	S7	LX1 FL500	1.500
550/600	155	4560	19.5	X7	LX1 FL600	1.500
1000	474	12 880	56.2	–	LX1 FL1000	1.500

Specifications

Average consumption at 20 °C for 50 or 60 Hz, $\cos \varphi = 0.9$:

- inrush: 1500...1730 VA,

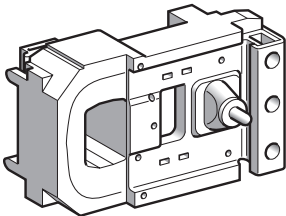
- sealed: 20...25 VA.

Operating cycles/hour ($\theta \leq 55$ °C): 1200.

Heat dissipation: 20 W.

Operating time at U_c: closing = 40...80 ms, opening = 100...200 ms.

813187



LX1 FL●●●

TeSys contactors

TeSys F contactors

a.c. 40 to 400 Hz supply coils

References (continued)

Low sealed consumption.

Operate on networks with harmonic numbers ≤ 7 .

Control circuit voltage Uc	Average resistance at 20 °C \pm 10 %		Inductance of closed circuit	Voltage code	Reference	Weight
	Inrush	Sealed				
V	Ω	Ω	H			kg
For contactor LC1 F780						
110/120	4.95 (2)	230 (2)	0.21	F7	LX1 FX110 (1)	3.000
115	4.95 (2)	230 (2)	0.21	FE7	LX1 FX110 (1)	3.000
127	6.1 (2)	280 (2)	0.26	G7	LX1 FX127 (1)	3.000
200/208	15.5 (2)	750 (2)	0.66	L7	LX1 FX200 (1)	3.000
220	19.5 (2)	920 (2)	0.82	M7	LX1 FX220 (1)	3.000
230	19.5 (2)	920 (2)	0.82	P7	LX1 FX220 (1)	3.000
240	19.5 (2)	920 (2)	0.82	U7	LX1 FX220 (1)	3.000
265/277	29.8 (2)	1330 (2)	1.25	W7	LX1 FX280 (1)	3.000
380	60.9 (2)	2780 (2)	2.3	Q7	LX1 FX380 (1)	3.000
400	60.9 (2)	2780 (2)	2.3	V7	LX1 FX380 (1)	3.000
415/480	74.3 (2)	3340 (2)	2.8	N7	LX1 FX415 (1)	3.000
440	74.3 (2)	3340 (2)	2.8	R7	LX1 FX415 (1)	3.000
500	92 (2)	4180 (2)	3.5	S7	LX1 FX500 (1)	3.000

Specifications

Average consumption at 20 °C for 50 or 60 Hz, $\cos \varphi = 0.9$:

- inrush: 1900...2300 VA, sealed: 44...55 VA.

Operating cycles/hour ($\theta \leq 55$ °C): 600.

Heat dissipation: 2 x 22 W.

Operating time at Uc: closing = 40...80 ms, opening = 130...230 ms.

For contactor LC1 F800

Control circuit voltage Uc	Voltage code	Rectifier Reference (3)	Coil Reference	Weight
V				kg
110/127	FE7	DR5 TE4U	LX4 F8FW	1.650
220/240	P7	DR5 TE4U	LX4 F8MW	1.650
380/440	V7	DR5 TE4S	LX4 F8QW	1.650

Specifications

Operating cycles/hour ($\theta \leq 55$ °C): 600.

Average consumption at 20 °C for 50 or 60 Hz, $\cos \varphi = 0.8$:

- inrush: 1700 VA, sealed: 12 VA

Operating time at Uc: closing = 60...80 ms, opening = 160...180 ms.

Control circuit voltage Uc	Average resistance at 20 °C \pm 10 %		Inductance of closed circuit	Voltage code	Reference	Weight
	Inrush	Sealed				
V	Ω	Ω	H			kg
For contactors LC1 F1700 and LC1 F2100						
110	5.92	106	0.72	F7	LX1 FK065 (4)	1.150
120	5.92	106	0.72	G7	LX1 FK070 (4)	1.150
220	9.55	260	1.25	M7	LX1 FK110 (4)	1.150
230	9.55	260	1.25	P7	LX1 FK110 (4)	1.150
240	11.5	315	1.50	U7	LX1 FK127 (4)	1.150
277	16.5	420	2.25	W7	LX1 FK140 (4)	1.150
380	29	735	3.75	Q7	LX1 FK200 (4)	1.150
400	29	735	3.75	V7	LX1 FK200 (4)	1.150
415	35.5	915	4.55	N7	LX1 FK220 (4)	1.150
440	35.5	915	4.55	R7	LX1 FK220 (4)	1.150
500	44.5	1160	5.75	S7	LX1 FK240 (4)	1.150

Specifications

Average consumption at 20 °C for 50 or 60 Hz, $\cos \varphi = 0.9$:

- inrush: 1600...2400 VA, sealed: 29...37 VA.

Operating cycles/hour ($\theta \leq 55$ °C): 600.

Heat dissipation: 2 x 18 W.

Operating time at Uc: closing = 40...75 ms, opening = 100...170 ms.

(1) Reference of set of 2 identical coils, to be connected in series.

(2) Value for the 2 coils in series.

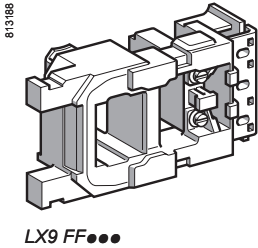
(3) Rectifier to be ordered separately: 0.100 kg.

(4) Order 2 coils and connect them in series.

TeSys contactors

TeSys F contactors

a.c. 40 to 400 Hz supply coils
for specific applications (1)



References

Low sealed consumption.
High tolerance to inrush voltage drops.
Immune to micro-breaks (mains supply or contact chain).
Operate on networks with harmonic numbers ≤ 7.

Control circuit voltage U _c	Average resistance at 20 °C ± 10 %		Inductance of closed circuit	Voltage code	Reference	Weight
	Inrush	Sealed				
V	Ω	Ω	H			kg
For contactors LC1 F115 and LC1 F150						
48	3.03	80.2	0.3	E7	LX9 FF048	0.430
110	14.8	579	2.08	F7	LX9 FF110	0.430
115	14.8	579	2.08	FE7	LX9 FF110	0.430
120/127	19	746	2.65	G7	LX9 FF127	0.430
208	45	1788	5.95	L7	LX9 FF200	0.430
220	59.4	2190	7.7	M7	LX9 FF220	0.430
230	59.4	2190	7.7	P7	LX9 FF220	0.430
240	73.5	2750	9.68	U7	LX9 FF240	0.430
380	173	6540	23	Q7	LX9 FF380	0.430
400	173	6540	23	V7	LX9 FF380	0.430
415	218	8460	30	N7	LX9 FF415	0.430
440	218	8460	30	R7	LX9 FF415	0.430
500	262	10 300	36	S7	LX9 FF500	0.430

Specifications

Average consumption at 20 °C: inrush: 690...855 VA, sealed: 6.6...8.1 VA.
Heat dissipation: 5.9...7.2 W.
Operating cycles/hour (θ ≤ 55 °C): < 2400.
Operating time at U_c: closing = 35 ms, opening = 130 ms.

For contactors LC1 F185 and LC1 F225

48	2.2	60	0.23	E7	LX9 FG048	0.550
110	10.4	411	1.46	F7	LX9 FG110	0.550
115	10.4	411	1.46	FE7	LX9 FG110	0.550
120/127	13	520	1.85	G7	LX9 FG127	0.550
208	33	1339	4.9	L7	LX9 FG200	0.550
220	42.1	1680	5.84	M7	LX9 FG220	0.550
230	42.1	1680	5.84	P7	LX9 FG220	0.550
240	50.6	2060	7.22	U7	LX9 FG240	0.550
380	128	4730	16.4	Q7	LX9 FG380	0.550
400	128	4730	16.4	V7	LX9 FG380	0.550
415	157	5930	20.6	N7	LX9 FG415	0.550
440	157	5930	20.6	R7	LX9 FG415	0.550
500	194	7550	26.3	S7	LX9 FG500	0.550

Specifications

Average consumption at 20 °C: inrush: 950...1180 VA, sealed: 8.9...10.9 VA.
Heat dissipation: 8...9.8 W.
Operating cycles/hour (θ ≤ 55 °C): < 2400.
Operating time at U_c: closing = 35 ms, opening = 130 ms.

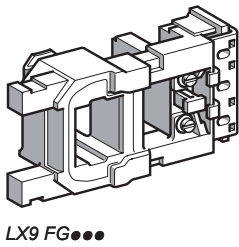
For contactors LC1 F265 and LC1 F330

48	2.96	72	(2)	–	LX9 FH0482	0.750
110/115	18.7	415	(2)	–	LX9 FH1102	0.750
120/127	22.9	156	(2)	–	LX9 FH1272	0.750
220/230	71.6	1621	(2)	–	LX9 FH2202	0.750
240	88	1968	(2)	–	LX9 FH2402	0.750
380/415	222	5075	(2)	–	LX9 FH3802	0.750
500	345	7990	(2)	–	LX9 FH5002	0.750

Specifications

Average consumption at 20 °C: inrush: 560...660 VA, sealed: 8...10 VA.
Heat dissipation: 8.4...10.4 W.
Operating cycles/hour (θ ≤ 55 °C): < 3600.
Operating time at U_c: closing = 45 ms, opening = 25 ms.

(1) Application examples: hoisting (inching, high operating rates), Main-Standby (unstable mains supplies). These coils are particularly suited for use at higher operating temperatures (mounting in non-ventilated compartments, enclosures, etc.).
(2) Please consult your Regional Sales Office.



TeSys contactors

TeSys F contactors

a.c. 40 to 400 Hz supply coils
for specific applications

References (continued)

Coils with short operating times (at Uc):

- N/O: 60 ms,
- N/C: 50 ms (~ side); 20 ms (≡ side).

Coils with high operating rates ($\theta \leq 70$ °C):

- 3600 operating cycles/hour,
- 1800 for LC1 F630.

Coils with low inrush consumption.

Control circuit voltage Uc	Average resistance at 20 °C ± 10 %		Inductance of closed circuit H	Rectifier Reference (1)	Coil Reference	Weight kg
	Inrush Ω	Sealed Ω				
For contactor LC1 F400						
48	4.03	43	0.22	DR5 TF4V	LX9 FJ917	0.970
110	25.7	246	1.3	DR5 TE4U	LX9 FJ925	0.970
127	32.3	302	1.7	DR5 TE4U	LX9 FJ926	0.970
220/230	99.5	919	5	DR5 TE4U	LX9 FJ931	0.970
380/415	311	3011	15	DR5 TE4S	LX9 FJ936	0.970
440	386	3690	19	DR5 TE4S	LX9 FJ937	0.970
500	478	4380	23	DR5 TE4S	LX9 FJ938	0.970

Specifications

Average consumption:

- inrush: 500 VA,
- sealed: 23 VA

Heat dissipation: 11.4...13.9 W.

For contactor LC1 F500						
48	3.73	30.7	0.18	DR5 TF4V	LX9 FK917	1.080
110	24	204	1.1	DR5 TE4U	LX9 FK925	1.080
127	29.8	250	1.4	DR5 TE4U	LX9 FK926	1.080
220/230	89.9	770	4	DR5 TE4U	LX9 FK931	1.080
380/415	274	2075	12	DR5 TE4S	LX9 FK936	1.080
440	361	3060	16	DR5 TE4S	LX9 FK937	1.080
500	448	3750	19	DR5 TE4S	LX9 FK938	1.080

Specifications

Average consumption:

- inrush: 550 VA,
- sealed: 31 VA

Heat dissipation: 15...18.3 W.

For contactor LC1 F630						
48	2.81	20.8	0.17	DR5 TF4V	LX9 FL917	1.450
110	13.5	114	0.77	DR5 TE4U	LX9 FL924	1.450
127	20.8	167	1.2	DR5 TE4U	LX9 FL926	1.450
220	52	425	2.9	DR5 TE4U	LX9 FL930	1.450
220/240	64.5	518	3.6	DR5 TE4U	LX9 FL931	1.450
380/400	163	1360	8.8	DR5 TE4S	LX9 FL935	1.450
415/440	204	1670	11	DR5 TE4S	LX9 FL936	1.450
500	312	2510	17	DR5 TE4S	LX9 FL938	1.450

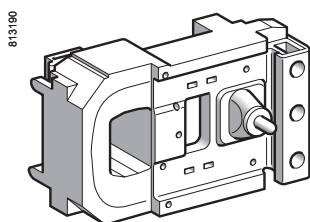
Specifications

Average consumption:

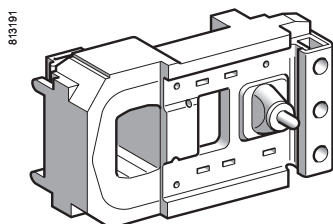
- inrush: 830 VA,
- sealed: 47 VA

Heat dissipation: 22.8...27.8 W.

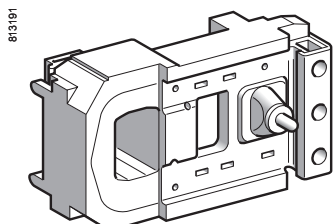
(1) Rectifier to be ordered separately: 0.100 kg.



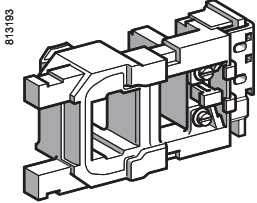
LX9 FJ●●●



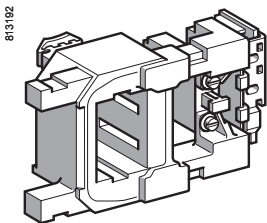
LX9 FK●●●



LX9 FL●●●



LX4 FF●●●



LX4 FH●●●

References

Low sealed consumption.
Operating cycles/hour ($\theta \leq 55^\circ\text{C}$): ≤ 2400 .

Control circuit voltage U_c	Average resistance at $20^\circ\text{C} \pm 10\%$		Inductance of closed circuit	Voltage code	Reference	Weight
	Inrush	Sealed				
V	Ω	Ω	H			kg
For contactors LC1 F115 and LC1 F150						
24	1.12	177	11	BD	LX4 FF024	0.430
48	4.52	715	42.7	ED	LX4 FF048	0.430
110	21.7	2940	179	FD	LX4 FF110	0.430
125	26.8	3560	223	GD	LX4 FF125	0.430
220/230	84	11 100	704	MD	LX4 FF220	0.430
250	105	13 000	868	UD	LX4 FF250	0.430
440/460	301	48 200	4000	RD	LX4 FF440	0.430

Specifications

Average consumption:
- inrush: 543...665 W,
- sealed: 3.94...4.83 W.
Operating time at U_c : closing = 30...40 ms, opening = 30...50 ms.

For contactors LC1 F185 and LC1 F225						
24	0.79	169	14.9	BD	LX4 FG024	0.550
48	3.2	662	55.3	ED	LX4 FG048	0.550
110	14.9	2810	241	FD	LX4 FG110	0.550
125	19	3320	289	GD	LX4 FG125	0.550
220/230	57.7	10 200	890	MD	LX4 FG220	0.550
250	76	12 400	1140	UD	LX4 FG250	0.550
440/460	223	39 700	4210	RD	LX4 FG440	0.550

Specifications

Average consumption:
- inrush: 737...902 W,
- sealed: 4.13...5.07 W.
Operating time at U_c : closing = 30...40 ms, opening = 30...50 ms.

For contactors LC1 F265 and LC1 F330						
24	0.9	192	26.3	BD	LX4 FH024	0.740
48	3.49	707	92.9	ED	LX4 FH048	0.740
110	16.8	3180	424	FD	LX4 FH110	0.740
125	20.8	3840	530	GD	LX4 FH125	0.740
220/230	65.7	11 500	1590	MD	LX4 FH220	0.740
250	84	13 900	1910	UD	LX4 FH250	0.740
440/460	255	44 000	7570	RD	LX4 FH440	0.740

Specifications

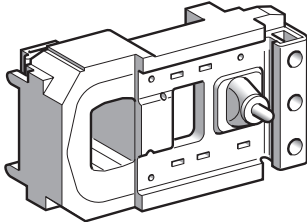
Average consumption:
- inrush: 655...803 W,
- sealed: 3.68...4.53 W.
Operating time at U_c : closing = 40...50 ms, opening = 40...65 ms.

For contactor LC1 F400						
48	2.5	558	56	ED	LX4 FJ048	0.970
110	12.7	2660	270	FD	LX4 FJ110	0.970
125	15.8	3130	330	GD	LX4 FJ125	0.970
220	47	8820	910	MD	LX4 FJ220	0.970
250	61	10 500	1200	UD	LX4 FJ250	0.970
440	236	33 750	4435	RD	LX4 FJ440	0.970

Specifications

Average consumption:
- inrush: 920...1140 W,
- sealed: 4...7.5 W.
Operating time at U_c : closing = 50...60 ms, opening = 45...60 ms.

613194



LX4 FK●●●

References (continued)

Low sealed consumption.

Control circuit voltage U _c	Average resistance at 20 °C ± 10 %		Inductance of closed circuit	Voltage code	Reference	Weight
	Inrush	Sealed				
V	Ω	Ω	H			kg
For contactor LC1 F500						
48	2.35	515	67	ED	LX4 FK048	1.080
110	11.5	2450	280	FD	LX4 FK110	1.080
125	15	2930	400	GD	LX4 FK125	1.080
220	44	8150	1080	MD	LX4 FK220	1.080
250	56	9650	1350	UD	LX4 FK250	1.080
440	225	31 300	5270	RD	LX4 FK440	1.080

Specifications

Average consumption:

- inrush: 990...1220 W,
- sealed: 4.54...8 W.

Operating cycles/hour ($\theta \leq 55$ °C): 2400.Operating time at U_c: closing = 50...60 ms, opening = 45...60 ms.

For contactor LC1 F630

48	1.7	353	40.5	ED	LX4 FL048	1.450
110	8.1	1680	180	FD	LX4 FL110	1.450
125	10	2110	230	GD	LX4 FL125	1.450
220	31	5160	650	MD	LX4 FL220	1.450
250	38	6080	815	UD	LX4 FL250	1.450
440	152	23 120	2910	RD	LX4 FL440	1.450

Specifications

Average consumption:

- inrush: 1420...1920 W,
- sealed: 6.5...12.5 W.

Operating cycles/hour ($\theta \leq 55$ °C): 1200.Operating time at U_c: closing = 60...70 ms, opening = 40...50.

For contactor LC1 F780

110	6.1 (2)	280 (2)	0.26	FD	LX4 FX110 (1)	3.000
125	7.7 (2)	410 (2)	0.33	GD	LX4 FX125 (1)	3.000
220	24.6 (2)	1100 (2)	1	MD	LX4 FX220 (1)	3.000
250	29.8 (2)	1330 (2)	1.25	UD	LX4 FX250 (1)	3.000
440	92 (2)	4180 (2)	3.5	RD	LX4 FX440 (1)	3.000

Specifications

Average consumption:

- inrush: 1960...2420 W,
- sealed: 42...52 W.

Operating cycles/hour ($\theta \leq 55$ °C): 600.Operating time at U_c: closing = 70...80 ms, opening = 100...130 ms.

For contactor LC1 F800

110/120	–	–	–	FW	LX4 F8FW	1.650
220/240	–	–	–	MW	LX4 F8MW	1.650
380/400	–	–	–	QW	LX4 F8QW	1.650

Specifications

Heat dissipation: 25 W.

Operating time at U_c: closing = 60...80 ms, opening = 40...50 ms.

For contactors LC1 F1700 and LC1 F2100

110	2.94	734	98	FD	LX4 FK055 (3)	1.080
125	3.73	916	122	GD	LX4 FK065 (3)	1.080
220	11.5	2450	280	MD	LX4 FK110 (3)	1.080
250	15	2930	400	UD	LX4 FK125 (3)	1.080
440	44	8150	1080	RD	LX4 FK220 (3)	1.080

Specifications

Average consumption:

- inrush: 2000...2200 W,
- sealed: 8...10 W.

Operating cycles/hour ($\theta \leq 55$ °C): 600.Operating time at U_c: closing = 50...60 ms, opening = 45...60 ms.

(1) Reference of set of 2 identical coils, to be connected in series.

(2) Value for the 2 coils in series.

(3) Order 2 coils and connect them in series.

TeSys contactors

TeSys F contactors

d.c. supply coils

for specific applications

References

Coils with short operating times (at U_c) :

- N/O: 60 ms,
- N/C: 20 ms.

Coils with high operating rates ($q \leq 70$ °C):

- 3600 operating cycles/hour,
- 1800 for LC1 F630.

Coils with low inrush consumption.

Control circuit voltage U_c	Average resistance at 20 °C ± 10 %		Inductance of closed circuit	Resistor (1)		Coil		Weight
	Inrush	Sealed		Qty required	Reference	Reference		
V	Ω	Ω	H					kg
For contactor LC1 F400								
48	5.11	99	0.27	1	DR2 SC0047	LX9 FJ918		0.970
110	32.3	632	1.7	1	DR2 SC0330	LX9 FJ926		0.970
125	39.4	760	2	1	DR2 SC0390	LX9 FJ927		0.970
220	123	2320	6.1	1	DR2 SC1200	LX9 FJ932		0.970
440/460	478	9080	23	1	DR2 SC4700	LX9 FJ938		0.970

Specifications

Average consumption:

- inrush: 430 W,
- sealed: 22 W.

For contactor LC1 F500

48	4.67	76.7	0.22	1	DR2 SC0039	LX9 FK918		1.080
110	29.8	470	1.4	1	DR2 SC0220	LX9 FK926		1.080
125	37.4	637	1.7	1	DR2 SC0330	LX9 FK927		1.080
220	115	1935	5.1	1	DR2 SC1000	LX9 FK932		1.080
440/460	448	7050	19	1	DR2 SC3300	LX9 FK938		1.080

Specifications

Average consumption:

- inrush: 470 W,
- sealed: 29 W.

For contactor LC1 F630

48	3.43	52.9	0.20	2	DR2 SC0047	LX9 FL918		1.450
110	17.2	272	0.98	2	DR2 SC0270	LX9 FL925		1.450
125	20.8	333	1.2	2	DR2 SC0330	LX9 FL926		1.450
220	64.5	1018	3.6	2	DR2 SC1000	LX9 FL931		1.450
440/460	260	4010	14	2	DR2 SC3900	LX9 FL937		1.450

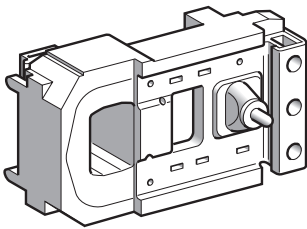
Specifications

Average consumption:

- inrush: 733 W,
- sealed: 48 W.

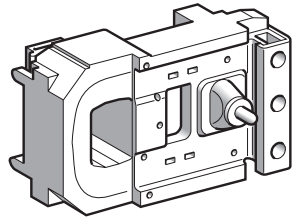
(1) Resistor to be ordered separately, weight of resistor: 0.030 kg.

813194



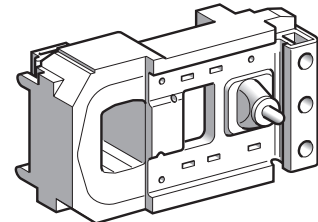
LX9 FJ●●●

813196



LX9 FK●●●

813196



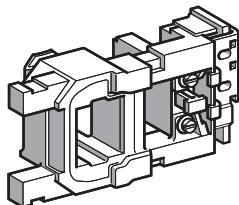
LX9 FL●●●

TeSys contactors

TeSys F contactors

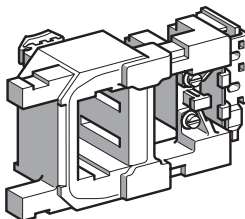
Wide range d.c. supply coils
for specific applications

813196



LX4 FF●●●

813197



LX4 FH●●●

References (continued)

Wide range coils: 0.7...1.25 Uc.
Operating cycles/hour: ≤ 60 (1).
Ambient temperature (operation): - 55 to + 70 °C.

Control circuit voltage Uc	Average resistance at 20 °C ± 10 %		Inductance of closed circuit H	Reference	Weight kg
	Inrush	Sealed			
V	Ω	Ω			
For contactors LC1 F115 and LC1 F150					
24	0.71	120	7.4	LX4 FF020	0.430
48	2.86	392	27	LX4 FF040	0.430
72	7.05	1055	66	LX4 FF060	0.430
110	13.2	1970	121	LX4 FF090	0.430
125	16.9	2340	149	LX4 FF100	0.430

Specifications

Average consumption:
- inrush: 415...1300 W,
- sealed: 3...9 W.

For contactors LC1 F185 and LC1 F225					
24	0.52	112	9.3	LX4 FG020	0.550
48	2	359	34.4	LX4 FG040	0.550
72	5.07	984	85	LX4 FG060	0.550
110	9.66	1840	157	LX4 FG090	0.550
125	12	2230	196	LX4 FG100	0.550

Specifications

Average consumption:
- inrush: 580...1820 W,
- sealed: 3.1...9.5 W.

For contactors LC1 F265 and LC1 F330					
24	0.58	129	17.3	LX4 FH020	0.740
48	2.19	400	59.5	LX4 FH040	0.740
72	5.58	1110	149	LX4 FH060	0.740
110	11	2120	287	LX4 FH090	0.740
125	13.8	2520	353	LX4 FH100	0.740

Specifications

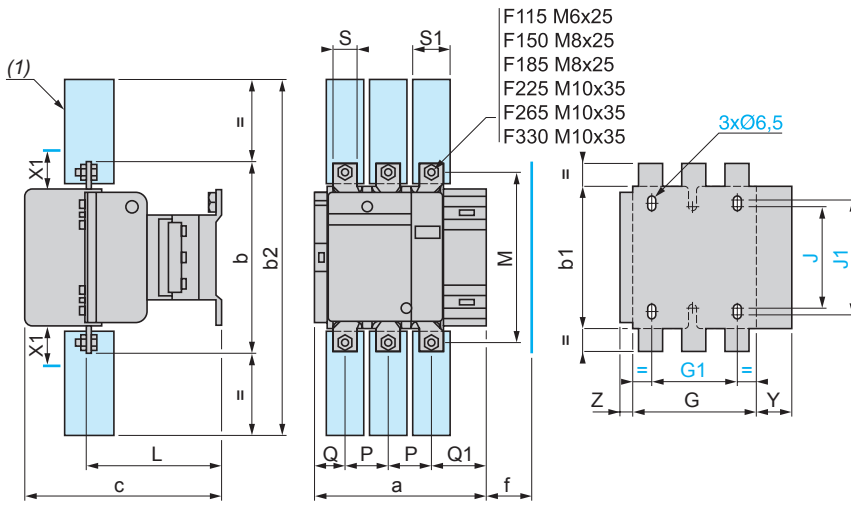
Average consumption:
- inrush: 515...1600 W,
- sealed: 2.7...8.5 W.

Oper- ational voltage	Average resistance at 20 °C ± 10 %	Induc- tance of closed circuit	Coil		Economy resistor Resistors in //		Reference of the assembly (2)	Weight kg
			Reference	No. Ω	Reference			
V	Ω	H						
For contactor LC1 F400								
24	1.05	0.049	LX2 FJW11	3 56	DR2 SC0056	LX5 FJW11	0.970	
48	4.8	0.22	LX2 FJW18	3 220	DR2 SC0220	LX5 FJW18	0.970	
72	9.6	0.44	LX2 FJW21	3 470	DR2 SC0470	LX5 FJW21	0.970	

Specifications

Average consumption:
- inrush: 290...860 W,
- sealed: 16...47 W.(1) The mechanical durability of the contactor is limited to 1 million operating cycles.
(2) The set comprises: 1 coil LX2 FJ and 3 resistors DR2 SC.

LC1 F115 to F330



X1 (mm) = Minimum electrical clearance according to operating voltage and breaking capacity.

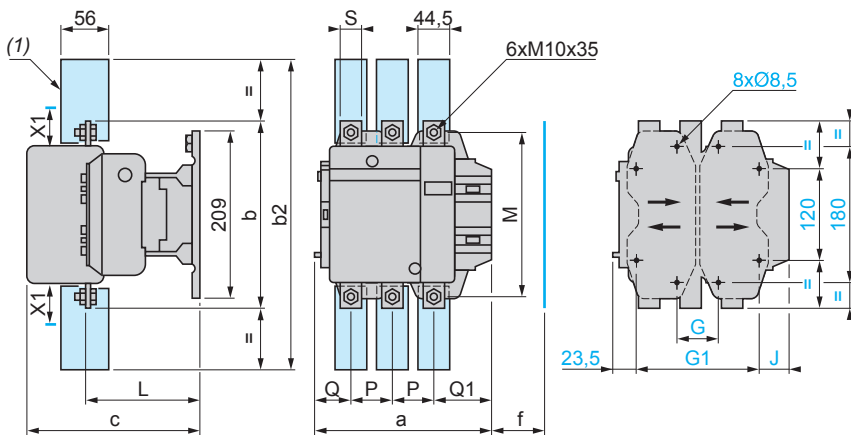
LC1	200...500 V	600...1000 V
F115, F150	10	15
F185	10	15
F225, F265	10	15
F330	10	15

(1) Power terminal protection shroud (see page 5/126).

LC1		a	b	b1	b2	c	f	G	G1	J	J1	L	M	P	Q	Q1	S	S1	Y	Z
F115	3P	163.5	162	137	265	171	131	106	80	106	120	107	147	37	29.5	60	20	26	44	13.5
	4P	200.5	162	137	265	171	131	143	80	106	120	107	147	37	29.5	60	20	26	44	13.5
F150	3P	163.5	170	137	301	171	131	106	80	106	120	107	150	40	26	57.5	20	34	44	13.5
	4P	200.5	170	137	301	171	131	143	80	106	120	107	150	40	26	55.5	20	34	44	13.5
F185	3P	168.5	174	137	305	181	130	111	80	106	120	113.5	154	40	29	59.5	20	34	44	13.5
	4P	208.5	174	137	305	181	130	151	80	106	120	113.5	154	40	29	59.5	20	34	44	13.5
F225	3P	168.5	197	137	364	181	130	111	80	106	120	113.5	172	48	21	51.5	25	44.5	44	13.5
	4P	208.5	197	137	364	181	130	151	80	106	120	113.5	172	48	17	47.5	25	44.5	44	13.5
F265	3P	201.5	203	145	375	213	147	142	96	106	120	141	178	48	39	66.5	25	44.5	38	21.5
	4P	244.5	203	145	375	213	147	190	96	106	120	141	178	48	34	66.5	25	44.5	38	21.5
F330	3P	213	206	145	375	219	147	154.5	96	106	120	145	181	48	43	74	25	44.5	38	20.5
	4P	261	206	145	375	219	147	202.5	96	106	120	145	181	48	43	74	25	44.5	38	20.5

f = minimum distance required for coil removal.

LC1 F400 and F500



X1 (mm) = Minimum electrical clearance according to operating voltage and breaking capacity.

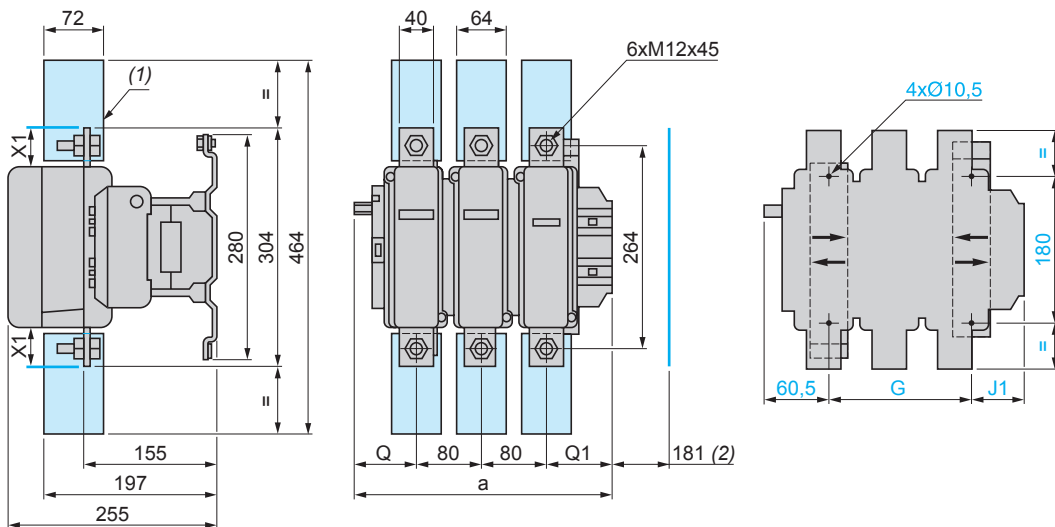
LC1	200...500 V	600...1000 V
F400	15	20
F500	15	20

(1) Power terminal protection shroud (see page 5/126).

LC1		a	b	b2	c	f	G	G	G	G1	G1	G1	J	L	M	P	Q	Q1	S
							supplied	min.	max.	supplied	min	max.							
F400	2P	213	206	375	219	146	80	66	102	170	156	192	19.5	145	181	48	69	96	25
	3P	213	206	375	219	146	80	66	102	170	156	192	19.5	145	181	48	43	74	25
	4P	261	206	375	219	146	80	66	150	170	156	240	67.5	145	181	48	43	74	25
F500	2P	233	238	400	232	150	80	66	120	170	156	210	39.5	146	208	55	76	102	30
	3P	233	238	400	232	150	80	66	120	170	156	210	39.5	146	208	55	46	77	30
	4P	288	238	400	232	150	140	66	175	230	156	265	34.5	146	208	55	46	77	30

f = minimum distance required for coil removal.

LC1 F630 and F800



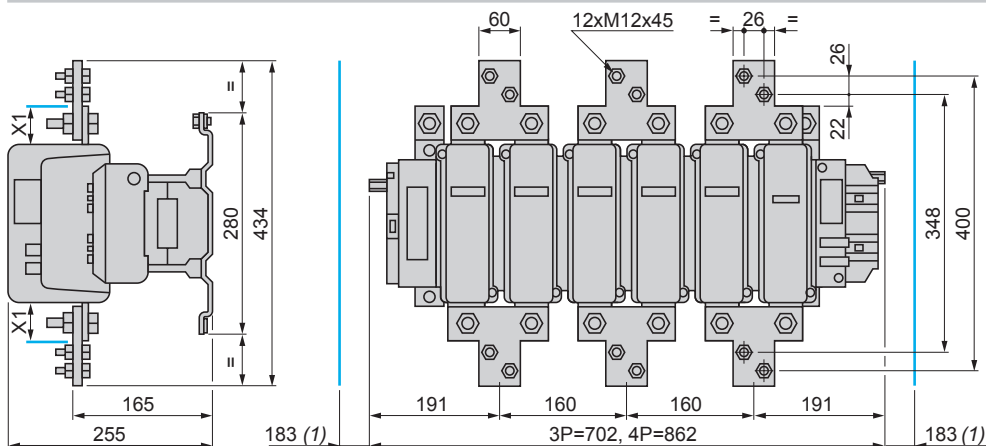
X1 (mm) = Minimum electrical clearance according to operating voltage and breaking capacity.

LC1		a	G	G	G	J1	Q	Q1
			supplied min.	min.	max.			
F630	2P	309	180	100	195	68.5	102	127
F630, F800	3P	309	180	100	195	68.5	60	89
F630	4P	389	240	150	275	68.5	60	89

Voltage	200...500 V	690...1000 V	200...690 V	1000 V
LC1 F630	20	30	—	—
LC1 F800	—	—	10	20

(1) Power terminal protection shroud (see page 5/126).
 (2) Minimum distance required for coil removal.

LC1 F780

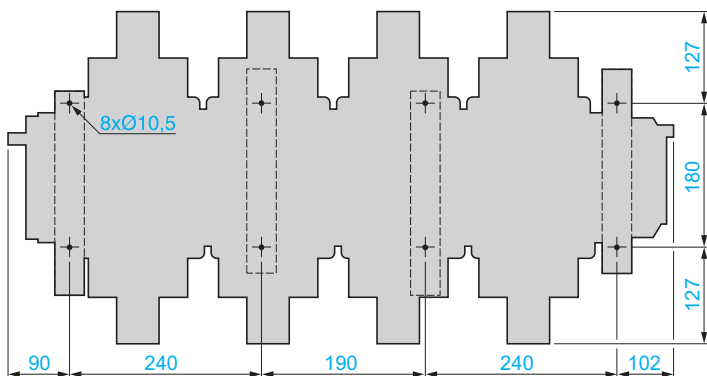


X1 (mm) = Minimum electrical clearance according to operating voltage and breaking capacity.

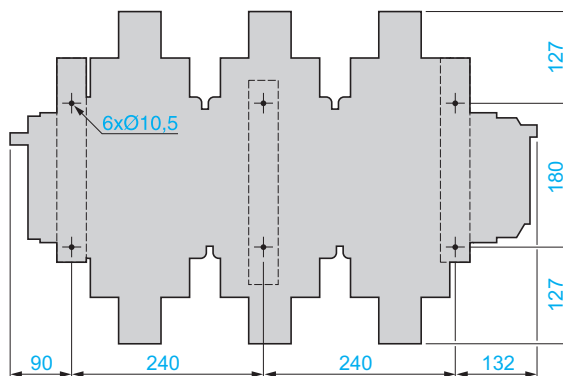
Voltage	200...500 V	690...1000 V
X1 (mm)	30	35

(1) Minimum distance required for coil removal.

Fixing centres of LC1 F7804



Fixing centres of LC1 F780



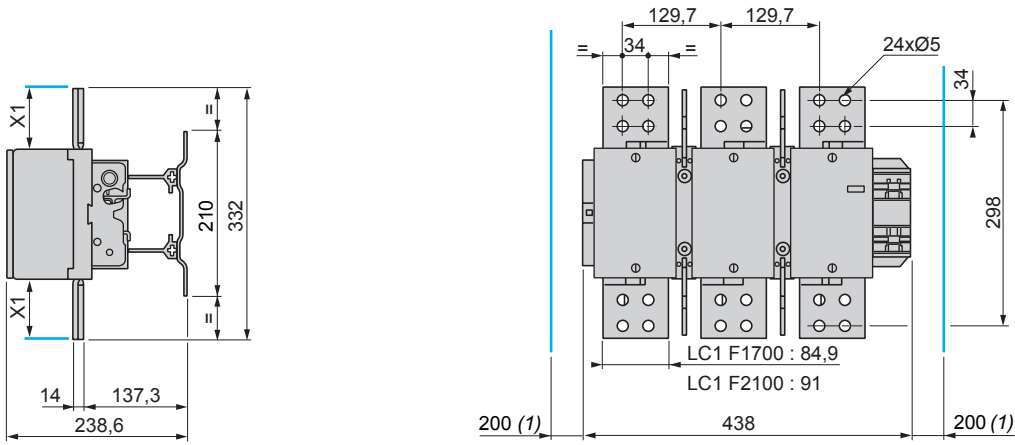
Selection :
pages 5/194 to 5/217

Characteristics :
pages 5/106 to 5/113

References :
pages 5/114 to 5/117

Schemes :
page 5/147

LC1 F1700 and LC1 F2100

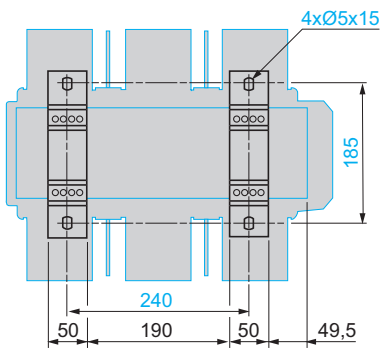


X1 (mm) = Minimum electrical clearance according to operating voltage and breaking capacity.

Voltage	200...500 V	690...1000 V
X1 (mm)	90	100

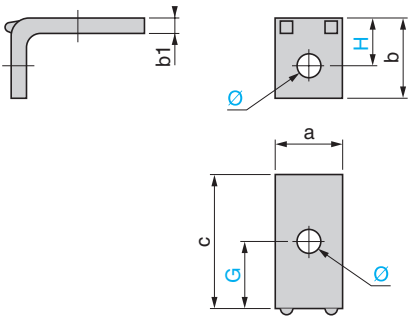
(1) Minimum distance required for coil removal.

Fixing centres of LC1 F1700 and 2100



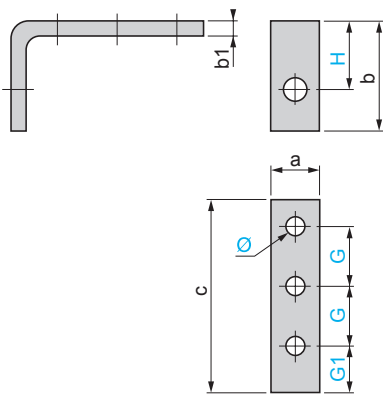
5

Right-angled connectors LA9 F●981 (set of 3) for rear connection



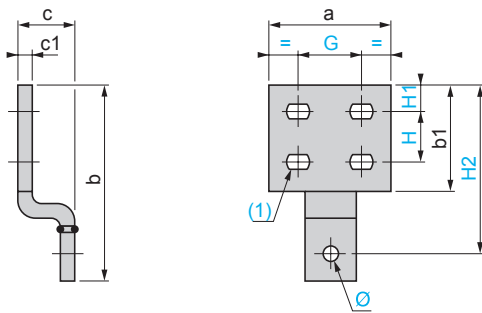
LA9	FF981	FG981	FJ981	FK981	FL981
a	15	20	25	30	40
b	18	23	29	35	48
b1	3	3	4	5	8
c	42	45	55	52	86
G	24	26	32.5	26	45
H	10.5	13	16.5	20	28
Ø	6.5	9	11	11	13

Right-angled connectors LA9 F●979 (set of 3) for side connection



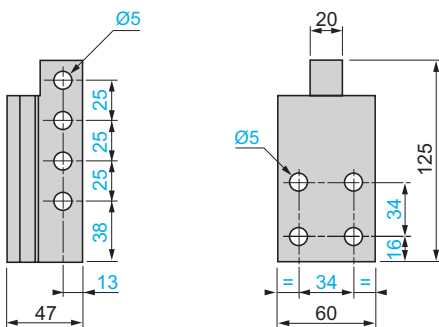
LA9	FF979	FG979	FJ979	FK979	FL979
a	15	20	25	30	40
b	54	58	63.5	68	117
b1	5	5	6	6	10
c	80	92	120	120	130
G	24	28	37	37	37.5
G1	20	22	29	29	35
H	36	39	41	42	76
Ø	6.5	9	11	11	13

Right-angled connectors LA9 F●980 with large surface area (set of 3)



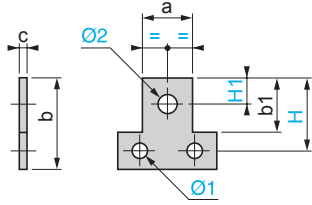
LA9	FF980	FG980	FJ980	FK980	FL980
a	35	40	50	60	100
b	70.5	82.5	98.5	114	154
b1	40	45	55	65	85
c	29	29	33	33	43
c1	3	3	5	5	10
G	18	20	25	29	53
H	18	20	22	26	40
H1	10	12	14	17	20
H2	60.5	72.5	84.5	97	132
Ø	6.5	9	11	11	13
(1)	Ø 7 x 10	Ø 9 x 12	Ø 11 x 14	Ø 12.5 x 15	Ø 12.5 x 15

Right-angled connectors LA9 F2100 (set of 6) for rear connection

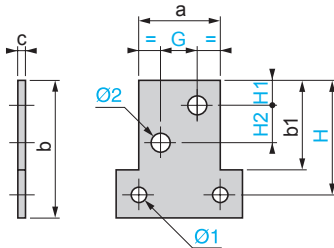


Paralleling links (set of 4)

LA9 FF602, FG602, FH602



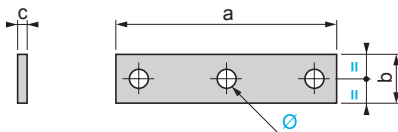
LA9 FK602, FL602



LA9	FF602	FG602	FH602	FK602	FL602
a	25	30	40	50	60
b	45	55	60	85	100
b1	30	35	40	55	65
c	4	5	8	10	10
G	–	–	–	22	26
H	37.5	45	52.5	70	85
H1	12.5	15	15	14	17
H2	–	–	–	22	26
Ø1	6.5	9	11	11	13
Ø2	11	11	13	11	14

Links for "star" connection of 3 poles

LA9 F•601



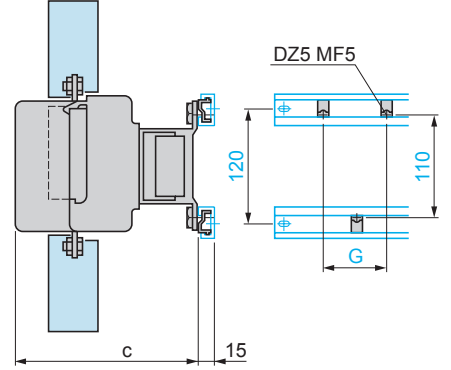
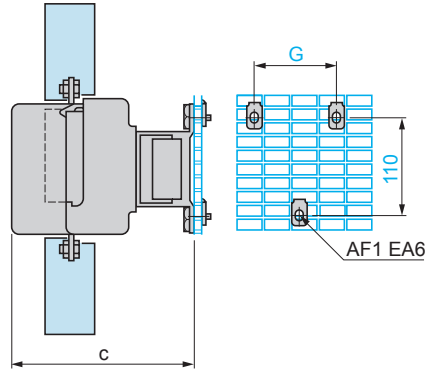
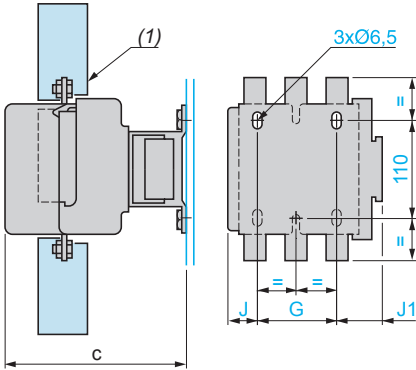
LA9	FF601	FG601	FH601	FK601	FL601
a	69	100	121	140	200
b	15	20	20	30	40
c	3	3	5	5	8
Ø	6.5 x 8.5	8.5 x 10.5	10.5 x 13	11	13

LC1 F115 to F330

On panel

On pre-slotted mounting plate AM1 PA, PB, PC

On rails DZ5 MB on 120 mm centres



LC1	F115 F150	F185 F225	F265	F330
c (2)	3P 171	181	213	219
	4P 171	181	213	219
G	3P 80	80	96	96
	4P 80	80	96	96
J	3P 26.5	29	44.5	44.5
	4P 45	49	68.5	68.5
J1	3P 57	59.5	61.5	61.5
	4P 75.5	79.5	85.5	85.5

LC1	F115 F150	F185 F225	F265	F330
c (2)	3P 171	181	213	219
	4P 171	181	213	219
G	3P 80	80	96	96
	4P 80	80	96	96

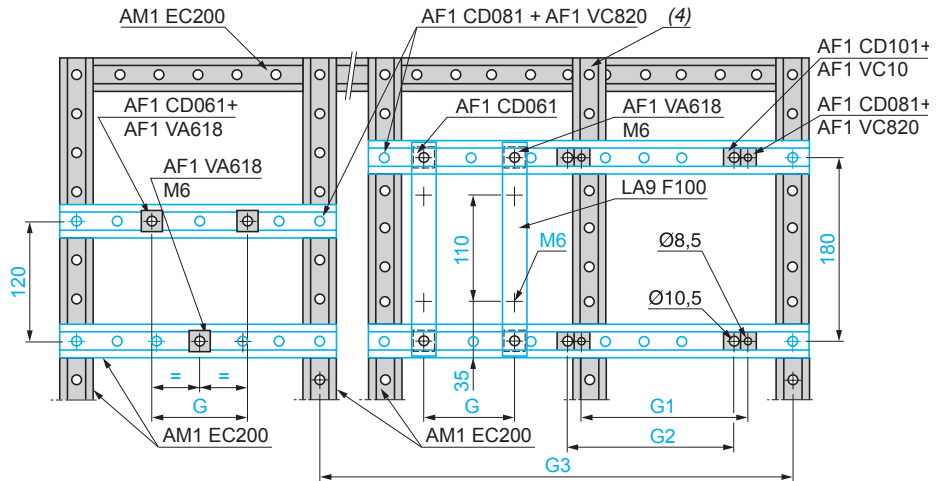
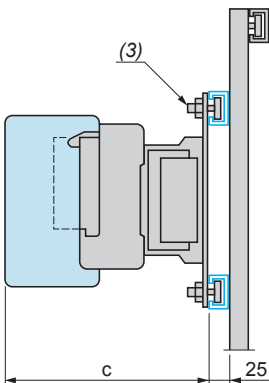
LC1	F115 F150	F185 F225	F265	F330
c (2)	3P 171	181	213	219
	4P 171	181	213	219
G	3P 80	80	96	96
	4P 80	80	96	96

LC1 F

On 2 notched rails AM1 EC●●●

LC1 F115 to F330

LC1 F400 to F800



LC1	F115, F150	F185, F225	F265	F330	F400	F500	F630	F780	F800
c	3P 165 (5)	176	207	213	219	232	255	255	255
	4P 165 (5)	176	207	213	219	232	255	255	-
G (M6)	3P 80	80	96	96	-	-	-	-	-
	4P 80	80	96	96	-	-	-	-	-
G1 (∅ 8.5)	3P -	-	-	-	80	80	-	-	-
	4P -	-	-	-	80	140	-	-	-
G2 (∅ 10.5)	3P -	-	-	-	-	-	180	See page 5/141	180
	4P -	-	-	-	-	-	240	-	-

(1) Power terminal protection shroud (see page 5/126).

(2) See X1 (minimum electrical clearance) pages 5/140 and 5/141.

(3) AF1 CD●●● and AF1 VA●●●.

(4) This AM1 EC200 upright is required when G2 or G3 is greater than 700 mm (please consult your Regional Sales Office).

(5) + 6 mm with time-delay block on LC1 F.

Contactors

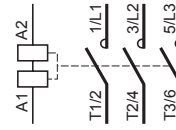
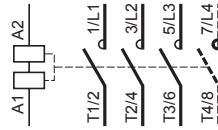
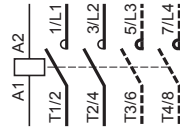
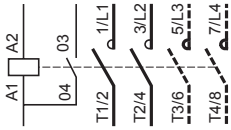
2, 3 and 4-pole contactors

LC1 F115 to F630
(coil LX1 F ~)

LC1 F115 to F630 (coil LX4 F ~)
LC1 F115 to F265 (coil LX9 F ~)
LC1 F800 (coil LX8 F ~ / ~)

LC1 F780 ~ or ~

LC1 F1700 ~ or ~
LC1 F2100 ~ or ~



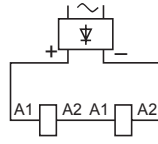
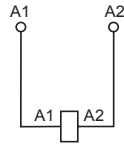
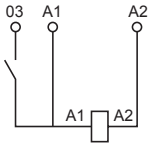
Coils

Standard ~ coils

LX1 FF, FG, FJ...FL
LX1 FH0422...FH3802

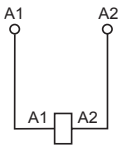
LX1 FH0202...FH0362
LX1 FH4402...FH10002
LX1 F8●

LX1 FX
Rectifier supplied and fixed on the contactor



Standard ~ coils

LX4 FF, FG, FH, FJ, FK, FL, FX (1), LX4 F8●



(1) 2 coils in series.

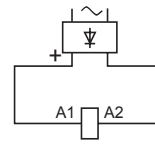
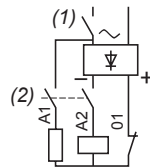
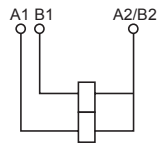
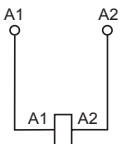
Special ~ coils

LX9 FF, FG

LX9 FH●●●2

LX9 FJ, FK, FL

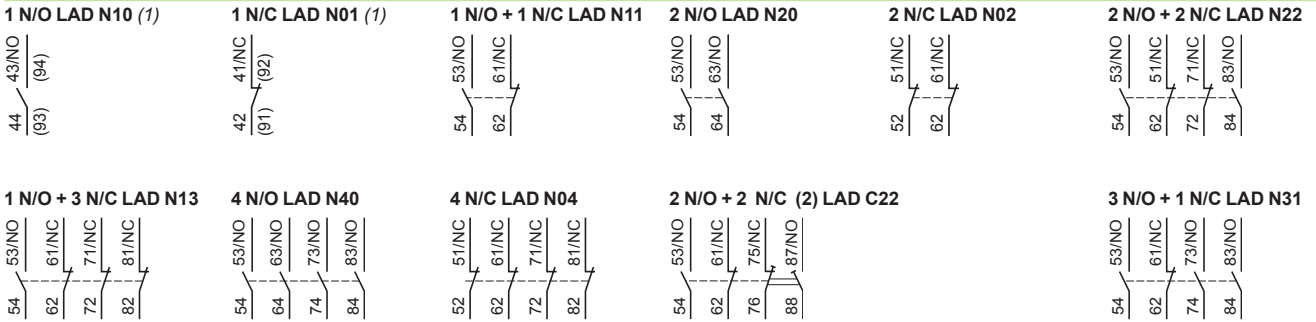
LX4 F8●



(1) Breaking on ~ side.
Drop-out time 50 ms.
(2) Breaking on ~ side.
Drop-out time 20 ms.

Add-on blocks

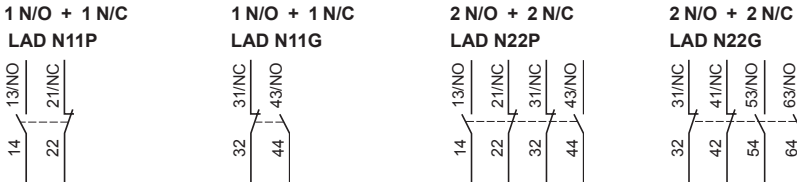
Instantaneous auxiliary contacts



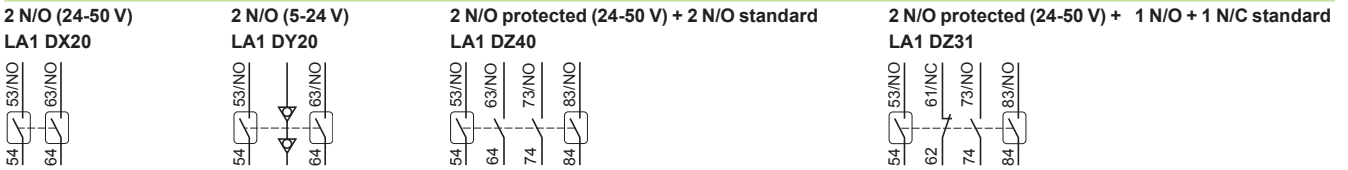
(1) Items in brackets: See "TeSys D contactors".

(2) 1 N/O + 1 N/C make before break.

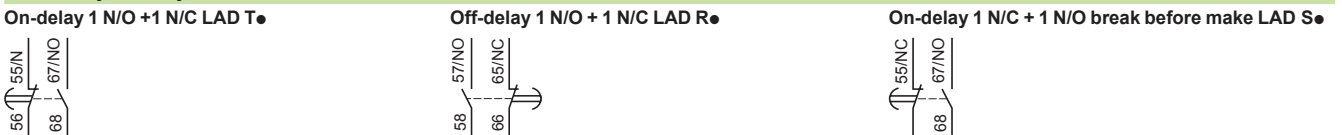
Instantaneous auxiliary contacts with terminal referencing conforming to standard EN 50012 (References: pages 5/122 and 5/123)



Dust and damp protected instantaneous auxiliary contacts



Time delay auxiliary contacts



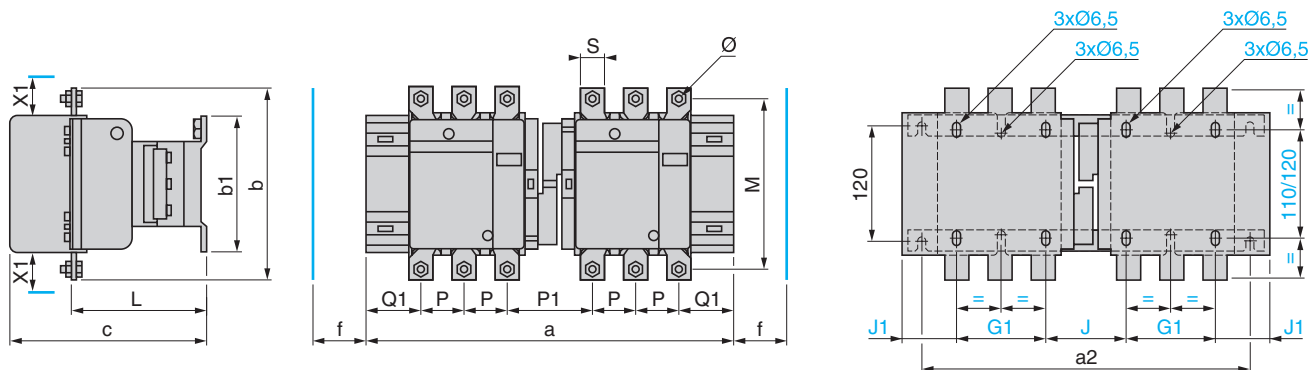
TeSys contactors

TeSys F reversing contactors and changeover contactor pairs

Horizontally mounted

Pre-assembled

LC2 F115 to F265 (reverser supplied on 2 bars which can be used for fixing the device)



f - Minimum distance required for coil removal.

Bar fixing centres
Vertical: 120 mm
Horizontal: a2 see table

X1 (mm) = Minimum electrical clearance according to operating voltage and breaking capacity.

LC1	200...500 V	660...1000 V
F115, F150	10	15
F185	10	15
F225, F265	10	15

LC2		a	a2	b	b1	c	G1	J	J1	L	M	P	P1	Q1	S	f	Ø
F115	3P	345	317	162	137	171	80	71	57	107	147	37	77	60	20	131	M6
	4P	419	378	162	137	171	80	108	75.5	107	147	37	77	60	20	131	M6
F150	3P	345	317	170	137	171	80	71	57	107	150	40	71	57	20	131	M8
	4P	422	381	170	137	171	80	111	75.5	107	150	40	71	55.5	20	131	M8
F185	3P	357	326	174	137	181	80	78	59.5	113.5	154	40	78	59.5	20	130	M8
	4P	437	390	174	137	181	80	118	79.5	113.5	154	40	78	59.5	20	130	M8
F225	3P	357	326	197	137	181	80	78	59.5	113.5	172	48	62	51.5	25	130	M10
	4P	437	390	197	137	181	80	118	79.5	113.5	172	48	54	47.5	25	130	M10
F265	3P	425	386	203	145	213	96	109	61.5	141	178	48	100	66.5	25	147	M10
	4P	521	464	203	145	213	96	157	85.5	141	178	48	100	66.5	25	147	M10

TeSys contactors

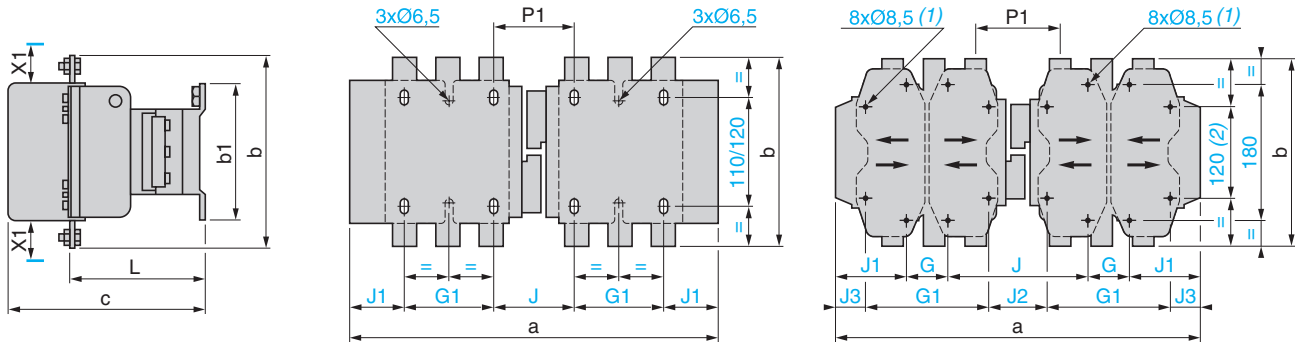
TeSys F reversing contactors and changeover contactor pairs

Horizontally mounted

For customer assembly, fixing recommended on AM1 EC uprights, please consult your Regional Sales Office.

2 x LC1 F115 to F330

2 x LC1 F400, F500, F630, F800



X1 (mm) = Minimum electrical clearance according to operating voltage and breaking capacity.

LC1	200...500 V	660...1000 V	200...690 V	1000 V
F115, F150	10	15	-	-
F185	10	15	-	-
F225, F265	10	15	-	-
F330	10	15	-	-
F400	15	20	-	-
F500	15	20	-	-
F630	20	30	-	-
F800	-	-	10	20

2 x LC1		a	b	b1	c	G	G1	J	J1	J2	J3	L	P1
F115	3P	345	162	137	171	-	80	71	57	-	-	107	77
	4P	419	162	137	171	-	80	108	75.5	-	-	107	77
F150	3P	345	170	137	171	-	80	71	57	-	-	107	71
	4P	422	170	137	171	-	80	111	75.5	-	-	107	71
F185	3P	357	174	137	181	-	80	78	59.5	-	-	113.5	78
	4P	437	174	137	181	-	80	118	79.5	-	-	113.5	78
F225	3P	357	197	137	181	-	80	78	59.5	-	-	113.5	62
	4P	437	197	137	181	-	80	118	79.5	-	-	113.5	54
F265	3P	425	203	145	213	-	96	109	61.5	-	-	141	100
	4P	521	203	145	213	-	96	157	85.5	-	-	141	100
F330	3P	447	206	145	219	-	96	124	65.5	-	-	145	107
	4P	543	206	145	219	-	96	172	89.5	-	-	145	107
F400	3P	446	206	209	219	80	170	157	64.5	67	19.5	145	107
	4P	542	206	209	219	80	170	157	112.5	67	67.5	145	107
F500	3P	485	238	209	232	80	170	156	84.5	66	39.5	146	112
	4P	595	238	209	232	140	230	156	79.5	66	34.5	146	112
F630	3P	636	304	280	255	180	-	139	68.5	-	-	155	137
	4P	796	304	280	255	240	-	139	88.5	-	-	155	137
F800	3P	636	304	280	255	180	-	139	68.5	-	-	155	137

(1) Except LC1 F630 and F800 : 4 x Ø 10.5.

(2) Except LC1 F630 and F800.

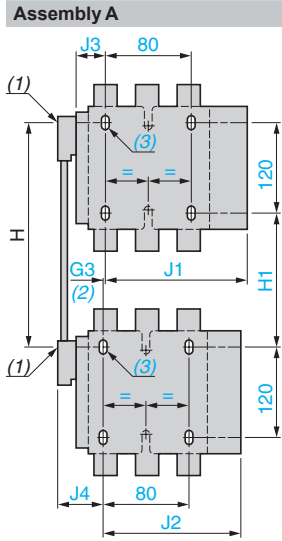
For other dimensions: see pages 5/140 and 5/141.

TeSys contactors

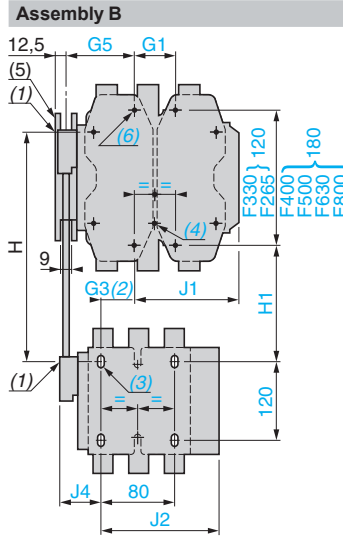
TeSys F reversing contactors and changeover contactor pairs

Vertically mounted

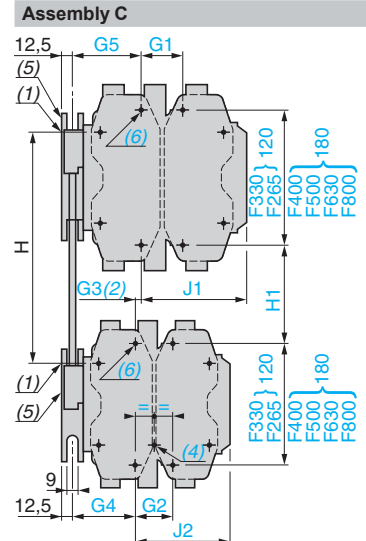
For customer assembly, with mechanical interlock (MI) **LA9 F**, fixing recommended on AM1 EC uprights (please consult your Regional Sales Office).
 2 x **LC1** identical or different ratings (**LC1 F115 to F630 and F800**). See pages 5/118 to 5/121.



- (1) Mechanical interlock shaft.
- (2) For assembly of contactors of different ratings only.
- (3) 4 x Ø6.5 for LC1 F115 to F225.



- (4) 4 x Ø6.5 for LC1 F265.
- (5) Mechanical interlock guide bracket.



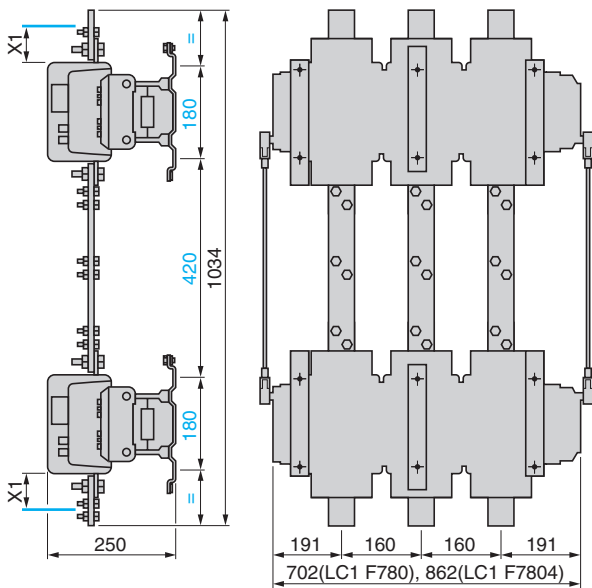
- (6) 4 x Ø8.5 for LC1 F400, F500 or 4 x Ø10.5 for LC1 F630 and F800.

Assembly A (7) - Mechanical interlock reference

	G3 3P	G3 4P	H min.	H max.	H1 min.	H1 max.	J1 3P	J1 4P
LA9 FF4F	0	0	200	310	80	190	137	155.5
LA9 FG4F	3	4	210	300	90	180	139.5	159.5
LA9 FG4G	0	0	220	310	100	190	139.5	159.5

	J2 3P	J2 4P	J3 3P	J3 4P	J4 3P	J4 4P
LA9 FF4F	137	155.5	48.5	67	48.5	67
LA9 FG4F	137	155.5	53	73	54	69
LA9 FG4G	139.5	159.5	53	73	53	73

For customer assembly, fixing recommended on AM1 EC uprights, please consult your Regional Sales Office
 2 x **LC1 F780**



Assembly B (7) - Mechanical interlock reference

	G1 3P	G1 4P	G3 3P	G3 4P	G5 3P	G5 4P	H min.	H max.
LA9 FH4F	96	96	21	27	60	83	240	380
LA9 FJ4F	80	80	45	26	83	83	250	380
LA9 FK4F	80	140	45	26	83	83	270	380
LA9 FL4F	180	240	35	17	74	74	310	380
LA9 FH4G	96	96	19	23	60	83	250	380
LA9 FJ4G	80	80	42	22	83	83	250	380
LA9 FK4G	80	140	42	22	83	83	270	380
LA9 FL4G	180	240	33	13	74	74	310	380

	H1 min.	H1 max.	J1 3P	J1 4P	J2 3P	J2 4P	J4 3P	J4 4P
LA9 FH4F	110	250	157.5	181.5	137	155.5	48.5	67
LA9 FJ4F	80	210	144.5	192.5	137	155.5	48.5	67
LA9 FK4F	100	210	164.5	219.5	137	155.5	48.5	67
LA9 FL4F	140	210	248.5	328.5	137	155.5	48.5	67
LA9 FH4G	120	250	157.5	181.5	139.5	159.5	53	73
LA9 FJ4G	90	220	144.5	192.5	139.5	159.5	53	73
LA9 FK4G	110	220	164.5	219.5	139.5	159.5	53	73
LA9 FL4G	150	220	248.5	328.5	139.5	159.5	53	73

Assembly C (7)

	G1 3P	G1 4P	G2 3P	G2 4P	G3 3P	G3 4P	G4 3P	G4 4P	G5 3P	G5 4P
LA9 FH4H	96	96	96	96	0	0	60	83	60	83
LA9 FJ4H	80	80	96	96	23	0	60	83	83	83
LA9 FK4H	80	140	96	96	23	0	60	83	83	83
LA9 FL4H	180	240	96	96	14	9 (8)	60	83	74	74
LA9 FJ4J	80	80	80	80	0	0	83	83	83	83
LA9 FK4J	80	140	80	80	0	0	83	83	83	83
LA9 FL4J	180	240	80	80	9 (8)	9 (8)	83	83	74	74
LA9 FK4K	80	140	80	140	0	0	83	83	83	83
LA9 FL4K	180	240	80	140	9 (8)	9 (8)	83	83	74	74
LA9 FL4L	180	240	180	240	0	0	74	74	74	74

	H min.	H max.	H1 min.	H1 max.	J1 3P	J1 4P	J2 3P	J2 4P
LA9 FH4H	250	380	130	260	157.5	181.5	157.5	181.5
LA9 FJ4H	260	380	110	230	144.5	192.5	157.5	181.5
LA9 FK4H	280	380	130	230	164.5	219.5	157.5	181.5
LA9 FL4H	330	380	170	220	248.5	328.5	157.5	181.5
LA9 FJ4J	260	380	60	200	144.5	192.5	144.5	192.5
LA9 FK4J	280	380	100	200	164.5	219.5	144.5	192.5
LA9 FL4J	325	380	140	195	248.5	329.5	144.5	192.5
LA9 FK4K	300	380	120	200	164.5	329.5	164.5	219.5
LA9 FL4K	345	380	160	195	248.5	328.5	164.5	219.5
LA9 FL4L	380	380	200	200	248.5	328.5	248.5	328.5

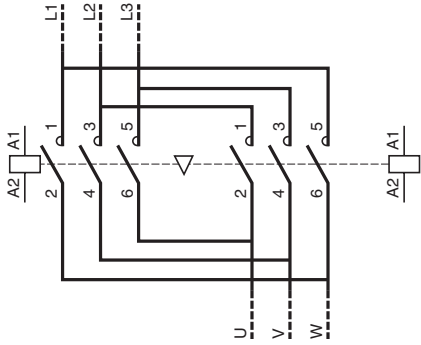
X1 and fixings, see page 5/141.

- (7) Only 3P for F800.
- (8) In this case, G4 is greater than G5.

Reversing contactors for motor control LC2 F

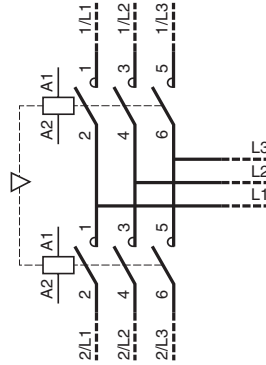
2 x LC1 F

Horizontally mounted



2 x LC1 F

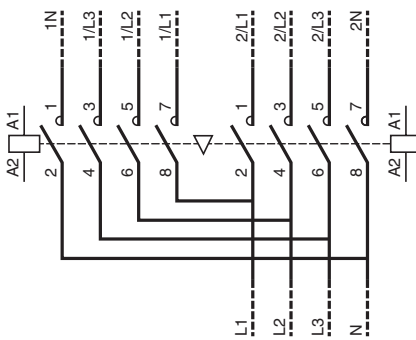
Vertically mounted



Changeover contactor pairs for distribution LC2 F

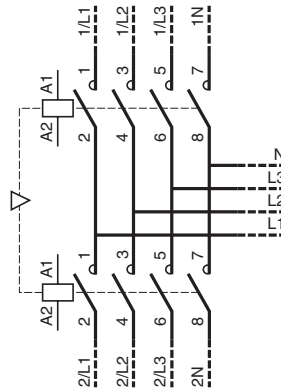
2 x LC1 F

Horizontally mounted



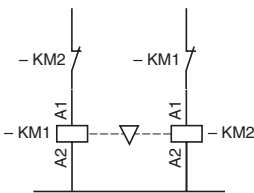
2 x LC1 F

Vertically mounted



Electrical interlocking of reversers fitted with mechanical interlock without integral electrical contacts

LA9 F



TeSys contactors

High power changeover contactor pairs for distribution

Control circuit: a.c. or d.c.

General

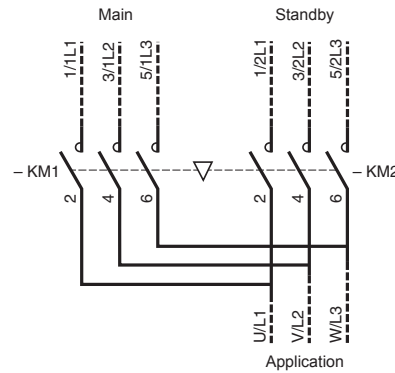
A changeover contactor pair ensures continuity of operation of an installation and energy management.

It switches between:

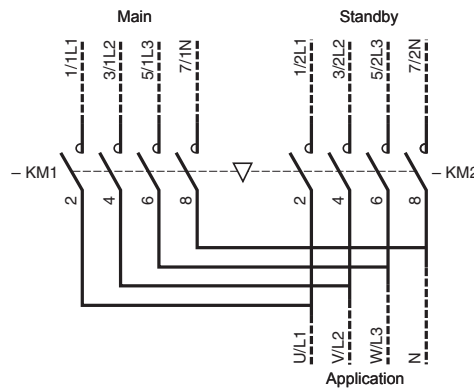
- a power supply source M (main) which normally supplies the installation,
- and a power supply source S (standby) which may be an incoming line from an additional network or a generating set.

The supply sources may be 3-phase or 3-phase + neutral.

Supply - 3-phase



Supply 3-phase + neutral



The 2 contactors must be mechanically and electrically interlocked to prevent any paralleling, even transitory, of the two supplies.

TeSys contactors

High power changeover contactor pairs for distribution

Control circuit: a.c. or d.c.

Changeover contactor pairs for customer assembly: 3-phase

Vertically mounted.

Maximum operational voltage: 1000 V

Utilisation category: AC-1

Maximum temperature in the vicinity of the devices: 40 °C

Maximum operational current		Contactors (1)		Mechanical interlock (2)
Main	Standby	Main	Standby	Reference
3-phase	3-phase	Reference	Reference	Reference
1600 A	1000 A	LC1 F780	LC1 F6309	LA9 FX970

1600 A	1600 A	LC1 F780	LC1 F780	LA9 FX970
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Changeover contactor pairs for customer assembly: 3-phase + neutral

Vertically mounted.

Maximum operational voltage: 1000 V

Utilisation category: AC-1

Maximum temperature in the vicinity of the devices: 40 °C

Maximum operational current		Contactors (1)		Mechanical interlock (2)
Main	Standby	Main	Standby	Reference
3-phase + N	3-phase + N	Reference	Reference	Reference
1600 A + 1000 A	1000 A + 1000 A	LC1 F78041	LC1 F63049	LA9 FX970 (3)

1600 A + 1000 A	1600 A + 1000 A	LC1 F78041	LC1 F78040	LA9 FX970 (3)
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1600 A + 1600 A	1000 A + 1000 A	LC1 F7804	LC1 F63049	LA9 FX971
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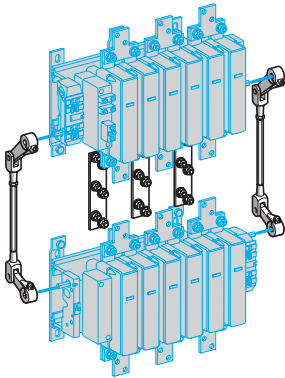
1600 A + 1600 A	1600 A + 1600 A	LC1 F7804	LC1 F7804	LA9 FX971
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(1) Coils to be ordered separately, see pages 5/132 to 5/137.

(2) Double mechanical interlock mechanism with 2 interlock connecting rods and 4 power connecting links. To order the the 2 auxiliary contact blocks **LAD N●1** required to obtain electrical interlocking between the 2 contactors: see page 5/123.

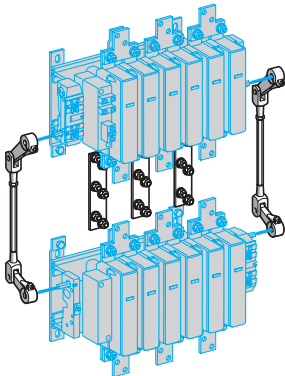
(3) Neutral connecting link not supplied (to be ordered separately).

813221



LA9 FX970

813222



LA9 FX971

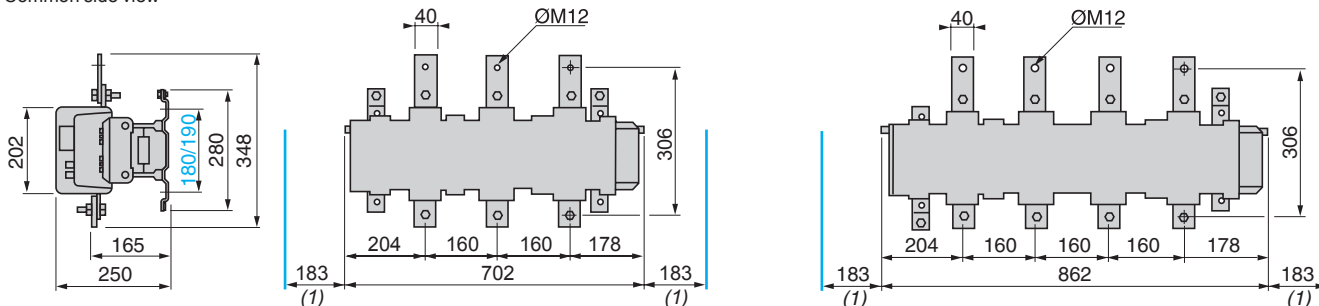
Dimensions

Contactor used to assemble high power changeover contactor pairs LC1 F780: see page 5/141

LC1 F6309

LC1 F63049

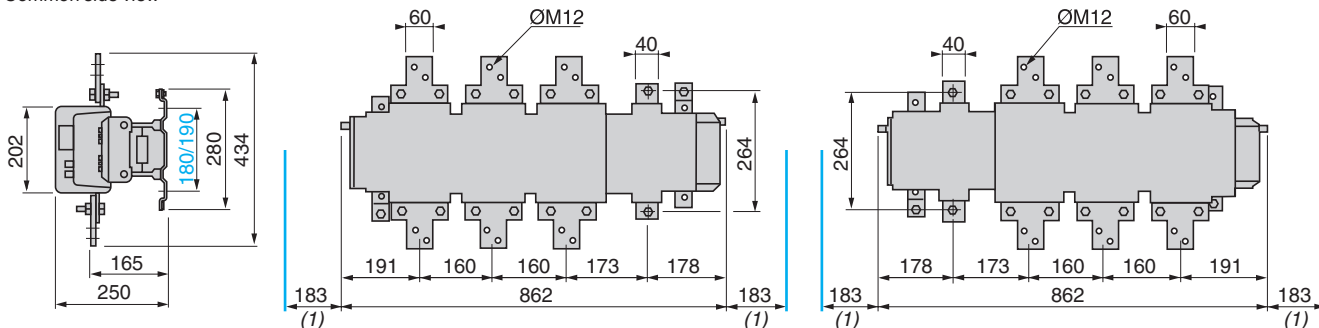
Common side view



LC1 F78040

LC1 F78041

Common side view

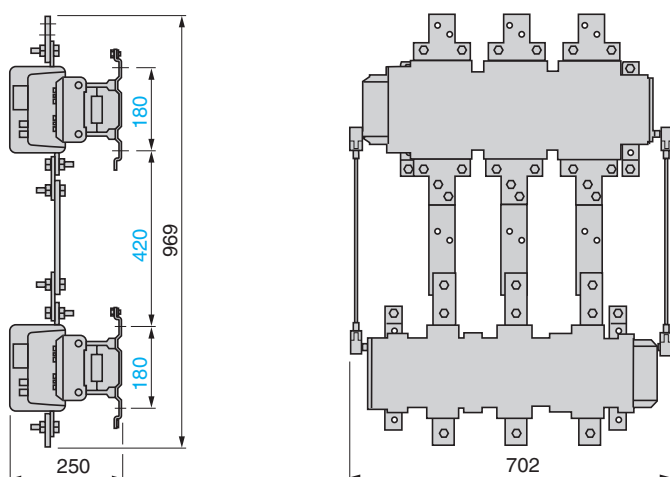


(1) Minimum distance required for removal of each coil.

3-phase changeover contactor pairs

LC1 F780 + LC1 F780 + LA9 FX970: see page 5/150

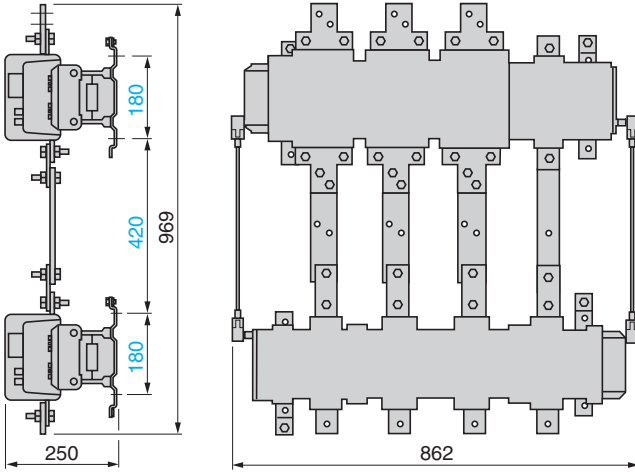
LC1 F780 + LC1 F6309 + LA9 FX970



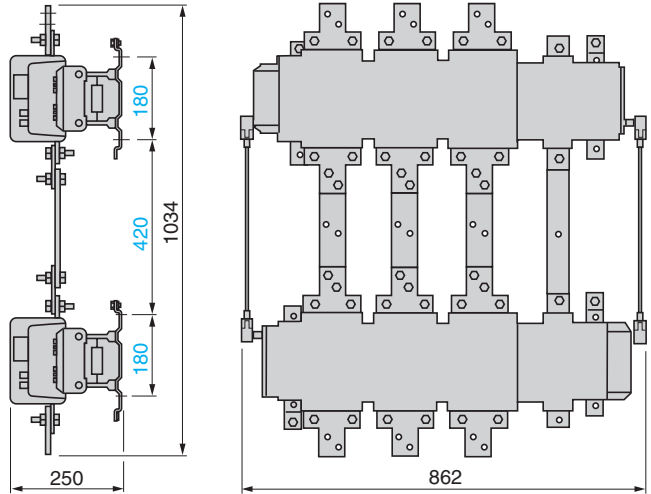
Dimensions (continued)

3-phase + neutral changeover contactor pairs

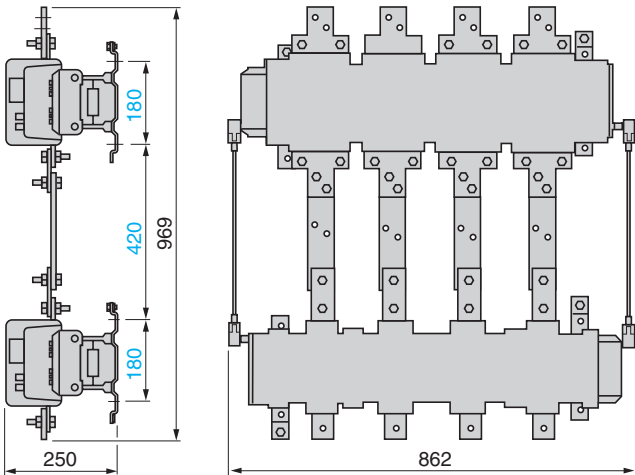
LC1 F78041 + LC1 F63049 + LA9 FX970



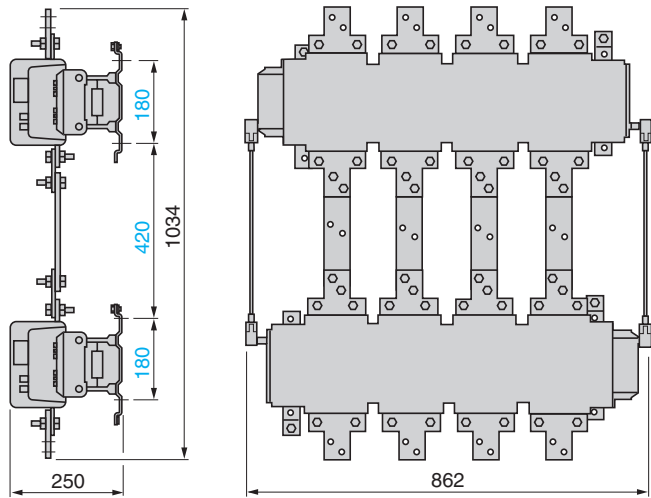
LC1 F78041 + LC1 F78040 + LA9 FX970



LC1 F7804 + LC1 F63049 + LA9 FX971



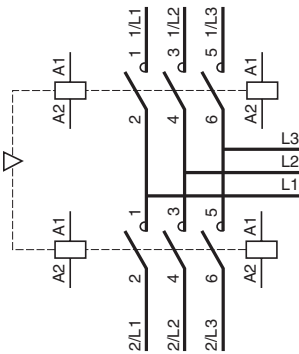
LC1 F7804 + LC1 F7804 + LA9 FX971



5

Schemes

3-phase changeover contactor pairs



3-phase + neutral changeover contactor pairs

