CJX2 Series AC Contactor

1 Overview

CJX2 series AC contactor hereinafter referred to as contactor) is primarily used in AC 50Hz (or 60Hz) circuits with the voltage up to 690V and with the current up to 170A for making and breaking the circuit remotely, frequent starts, and control of AC motor, and forms the electromagnetic starter together with appropriate thermal relays for protection of circuits that may be overloaded.

Standard: GB/T 14048.4.

2 Type Designation

CJ X 2 – □ □ □ □

- No code for AC control; Z means DC control
- No code for general AC contactor; N means reversible AC contactor (for 3P)
- "10" means with one normally open auxiliary contact (for 3P)
- "01" means with one normally closed auxiliary contact (for 3P)
- "004" means four normally open main contacts
- "008" means two normally open and two normally closed main contacts
- Rated operating current of the general AC contactor under the rated operating voltage 380V under the AC-3 usage category
- Design code
- Miniature
- AC

F4 – □ □

- Number of normally closed auxiliary contacts
- Number of normally open auxiliary contacts
- Auxiliary contact set

LA □-□

- D20 means the delay range 0.1~3s
- D22 means the delay range 0.1~30s
- D24 means the delay range 10~180s
- 2 means power-on delay; 3 means power outage delay
- Air delay head

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3 Technical Parameters

3.1 Main parameters and technical performance indicators of contactor (see Table 1)

Table 1

Model			CJX2-09(Z)	CJX2-12(Z)	CJX2-18(Z)	CJX2-25(Z)	CJX2-32(Z)	CJX2-40(Z)	CJX2-50(Z)	CJX2-65(Z)	CJX2-80(Z)	CJX2-95(Z)	CJX2-115(Z)	CJX2-150(Z)	CJX2-170(Z)
Rated operating current (A)	220V	AC-3	9	12	18	25	32	40	50	65	80	95	115	150	170
		AC-4	3.5	5	7.7	8.5	12	18.5	24	28	37	44	50	65	70
	380V	AC-3	9	12	18	25	32	40	50	65	80	95	115	150	170
		AC-4	3.5	5	7.7	8.5	12	18.5	24	28	37	44	50	65	70
	660V	AC-3	6.6	8.9	10.6	18	21	34	39	42	49	4	86	107	118
		AC-4	1.5	2	3.8	4.4	7.5	9	12	14	17.3	21.3	25	32	35
Resistive current in free air (A)			20	20	32	40	50	60	80	80	100	100	200	200	200
Rated insulation voltage (V)			690	690	690	690	690	690	690	690	690	690	690	690	690
Controlled three-phase squirrel cage motor power (AC-3) kW	220V		2.2	3	4	5.5	7.5	11	15	18.5	25	25	30	45	50
	380V		4	5.5	7.5	11	15	18.5	22	30	45	45	55	75	90
	660V		5.5	7.5	9	15	18.5	30	33	37	45	45	80	100	110
Operating frequency (times / h)	Electrical life	AC-3	1200	1200	1200	1200	600	600	600	600	600	600	600	600	600
		AC-4	300	30	300	300	300	300	300	300	300	300	300	300	300
	Mechanical life		3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600
Electrical life (10,000 times)	AC-3		100	100	100	100	80	80	60	60	60	60	60	60	60
	AC-4		20	20	20	20	20	15	15	15	10	10	10	10	10
Mechanical life (10,000 times)			1000	1000	1000	1000	800	800	800	800	600	600	600	600	600
Model of matched fuse			RT16-20	RT16-20	RT16-32	RT16-40	RT16-50	RT16-63	RT16-80	RT16-80	RT16-100	RT16-125	RT16-160	RT16-200	RT16-250
Matched thermal relay			JR28-25				JR28-25 JR28-36	JR28-93							
			JRS1-25					JRS1-80							
Cold-pressed terminal	Qty.		1~2	1~2	1~2	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2
	Soft wire with cold-pressed terminal	mm²	2.5	2.5	4	4 4	4 4	10 10	16 16	16 16	50 25	50 25	50 25	50 25	50 25
	Soft wire without cold-pressed terminal		4	4	6	10 6	10 6	16 10	25 16	25 16	50 35	50 35	50 35	50 35	50 35
	Hard wire		4	4	6	6 6	6 6	10 10	25 -	25 -	50 -	50 -	50 -	50 -	50 -
Coil power 50Hz	Suction (VA)		70	70	70	110	110	200	200	200	200	200	300	300	300
	Holding (VA)		< 9.0	< 9.0	< 9.5	< 14.0	< 14.0	< 34.2	< 34.2	< 34.2	< 36.6	< 36.6	< 51.3	< 51.3	< 51.3
	Power (W)		1.8~2.7	1.8~2.7	1.8~2.7	3~4	3~4	6~10	6~10	6~10	6~10	6~10	8~12	8~12	8~12
Operation range			Pull-in voltage: 85%Us~110%Us Release voltage:AC 20%Us~70%Us DC 10%Us~70%Us												
Basic parameters of auxiliary contact			AC-15: 360VA DC-13:33W Ith: 10A												

3.2 Rated control power supply voltage Us and code of coil (see Table 2).

Table 2

Coil voltage Us (V)	24	36	48	110	127	220	230	240	380	400	415	440	480	600
50Hz	B5	C5	E5	F5	G5	M5	P5	U5	Q5	V5	N5	R5	T5	X5
60Hz	B6	-	E6	F6	G6	M6	P6	U6	Q6	V6	N6	R6	T6	X6
50/60Hz	B7	-	E7	F7	-	M7	P7	U7	Q7	V7	N7	R7	T7	X7

3.3 Rated control power supply voltage Us and code of DC coil (see Table 3).

Table 3

Coil voltage Us (V)	24	36	48	60	72	110	125	220	250	440	600	440
Code	BD	CD	ED	ND	SD	FD	GD	MD	-	-	-	R5

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4. Normal Working Conditions and Installation Conditions

4.1 Ambient air temperature: -5℃ ~ +40℃; the average temperature within 24 hours does not exceed +35℃.

4.2 Altitude: not more than 2000m.

4.3 Atmospheric conditions: the relative air humidity does not exceed 50% at the maximum temperature of +40℃, and higher relative humidity can be allowed at lower temperatures, such as 90% at 20℃; special measures shall be taken for condensation occasionally generated due to temperature changes.

4.4 Pollution level: 3.

4.5 Installation category: Class III.

4.6 Installation conditions: The inclination between the mounting surface and the vertical surface is not greater than ±5°.

4.7 Impact vibration: The product should be installed and used in places where there is no obvious shaking, impact or vibration.

5 Other Structures

5.1 Structural features:

Some accessories such as auxiliary contact sets, air delay heads (its delay ranges are listed in Table 5), and thermal relays can be installed in a building block installation way to form a variety of derived products (see Table 4).

Table 4

Derived product	Contactor	Aux. module	Sketch
Delay contactor		 Air delay head	
Reversible contactor		 Mechanical interlock mechanism	
Magnetic starter		 Thermal relay	
Capacitor changeover contactor		 Current limiting contact set	
Star-delta starter		 Air delay head  Auxiliary contact group	

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5.2 The contactor has advantages of small size, light weight, small power consumption, long life, safety and reliability.

5.3 The 32A and below contact body has one normally open or normally closed auxiliary contact, and the 40A and below contact has one pairs of normally open and normally closed auxiliary contact. In addition, F4 auxiliary contact sets (two sets or four sets) or air delay head can be provided on the top (see Table 5). CJX2-115~170 contactor body is not equipped with an auxiliary contact, but it can have up to 4 pairs additional F4 series auxiliary contact sets.

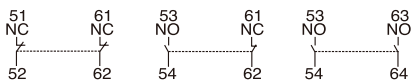
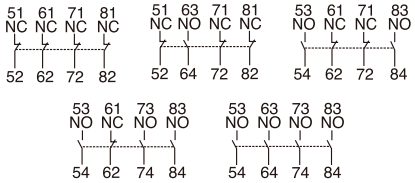
5.4 In addition to screw installation, the contactor can be installed on a 35mm (CJX2-09~95) and 75mm (CJX2-40~95) type standard clamp rail. CJ×2-115~170 can be installed on a 2×35mm (center distance 100mm) type standard clamp rail.

Table 5

Model	Delay range	Qty. of delay contacts	Delay type	Sketch
LA2-D20	0.1s ~ 3s	NO + NC	Power-on delay	
LA2-D22	0.1s ~ 30s	NO + NC	Power-on delay	
LA2-D24	10s ~ 180s	NO + NC	Power-on delay	
LA3-D20	0.1s ~ 3s	NO + NC	Power outage delay	
LA3-D22	0.1s ~ 30s	NO + NC	Power outage delay	
LA3-D24	10s ~ 180s	NO + NC	Power outage delay	

F 4 - 22

- 22 — Contact type
  - Two sets 11 20 02
  - Four sets 22 40 04 31 13
- 4 — Design code
- F — Accessory code

Installation location	Number of poles	Contact layout	Contact form	Applied product	Material description
Top	2		1NO+1NC	CJX2-09 ~ 170	F4-11
			2NO+0NC		F4-20
			0NO+2NC		F4-02
	4		2NO+2NC		F4-22
			4NO+0NC		F4-40
			0NO+4NC		F4-04
			3NO+1NC		F4-31
			1NO+3NC		F4-13

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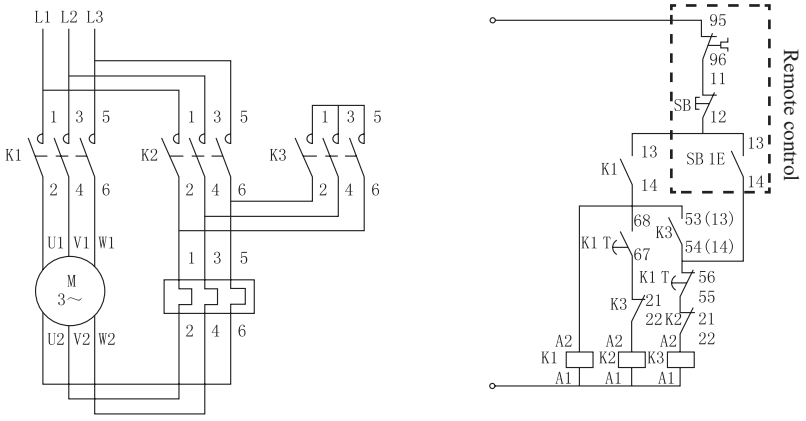
6 Bulk Parts Selection for Y-Δ Starter Assembly

Star-delta voltage-reduction start is composed of three conventional AC contactors. By changing the motor winding method, the voltage-reduction start can be realized. As the motor starting current is proportional to the power voltage, the starting current is only 1/3 of the full voltage starting current, and its starting torque is only 1/3 of the full voltage starting torque. Therefore, this starting method is suitable for non-load start and for start with low load torque, requiring the load torque to increase gradually.

6.1 Star-delta startup wiring diagram



6.2 Star-delta starting bulk contactor model table

Table 6

380V three-phase squirrel cage motor rated current Ie Power (kW)			Model & Spec. of AC contactor		
Power(kW)	Rated current Ie(A)	0.58 rated current Ie (A)	One uses direct connection method K1	One uses delta connection method K2	One uses start connection method K3
5.5	11.5	6	CJX2-0910	CJX2-0901	CJX2-0901
7.5	15.5	9	CJX2-1210	CJX2-1201	CJX2-0901
9	18.5	11	CJX2-1810	CJX2-1801	CJX2-0901
10	20	11.6	CJX2-1810	CJX2-1801	CJX2-0901
11	22	13	CJX2-1810	CJX2-1801	CJX2-0901
15	30	16	CJX2-2510	CJX2-2501	CJX2-1201
18.5	37	22	CJX2-2510	CJX2-2501	CJX2-1801
22	44	26	CJX2-3210	CJX2-3201	CJX2-1801
25	50	29	CJX2-3210	CJX2-3201	CJX2-2501
30	60	35	CJX2-4011	CJX2-4011	CJX2-2501
33	68	39.5	CJX2-4011	CJX2-4011	CJX2-3201
37	72	40	CJX2-5011	CJX2-5011	CJX2-3201
40	79	46	CJX2-5011	CJX2-5011	CJX2-4011
45	85	47	CJX2-6511	CJX2-6511	CJX2-4011
51	98	56	CJX2-6511	CJX2-6511	CJX2-4011
55	105	58	CJX2-6511	CJX2-6511	CJX2-4011
59	112	65	CJX2-8011	CJX2-8011	CJX2-5011
63	117	67.9	CJX2-8011	CJX2-8011	CJX2-5011
75	138	78	CJX2-9511	CJX2-9511	CJX2-6511

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7 Outline and Installation Dimensions

7.1 Outline and installation dimensions of product (see Fig. 1, Fig. 2, Fig. 3, and Table 7)

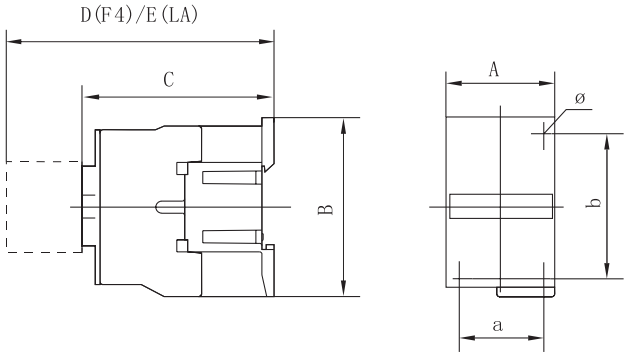

Fig. 1 CJX2-09~32 outline and installation dimensions

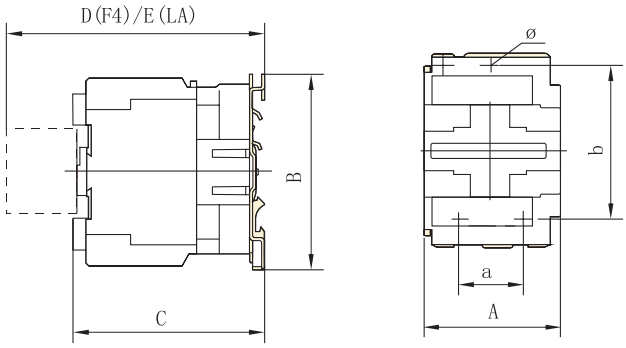

Fig. 2 CJX2-40-95 outline and installation dimensions

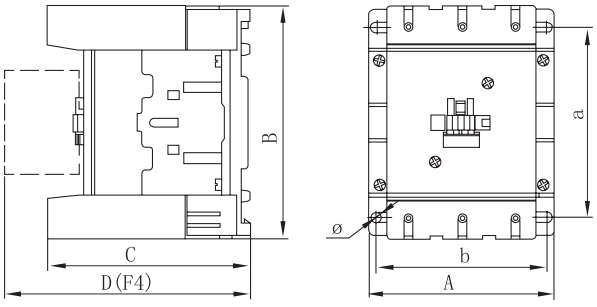

Fig. 3 CJX2-115-170 outline and installation dimensions

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Table 7

Contactor model	A max	B max	C max	D max	E max	a	b	Φ
CJX2-09, 12	47	76	82	120.5	140.5	34/35	50/60	4.5
CJX2-09Z, 12Z	47	76	116	154.5	174.5	34/35	50/60	4.5
CJX2-18	47	76	87	125.5	145.5	34/35	50/60	4.5
CJX2-18Z	47	76	122	160.5	180.5	34/35	50/60	4.5
CJX2-25	58	86	96	134.5	154.5	40	50/60	4.5
CJX2-25Z	58	86	131	169.5	189.5	40	50/60	4.5
CJX2-32	58	86	101	139.5	159.5	40	50/60	4.5
CJX2-32Z	58	86	138	176.5	196.5	40	50/60	4.5
CJX2-40. 50, 65	79	128	116	154.5	174.5	40	100/110	6.5
CJX2-40Z. 50Z, 65Z	79	128	172	210.5	230.5	40	100/110	6.5
CJX2-40004, 50004, 65004	86	128	116	154.5	174.5	40	100/110	6.5
CJX2-40008, 50008, 65008	86	128	125	163.5	183.5	40	100/110	6.5
CJX2-80, 95	87	128	127	165.5	185.5	40	100/110	6.5
CJX2-80Z, 95Z	87	128	183	221.5	241.5	40	100/110	6.5
CJX2-80004, 95004	98	128	124	162.5	182.5	40	100/110	6.5
CJX2-80008, 95008	98	136	124	162.5	182.5	40	100/110	6.5
CJX2-115, 150, 170	122	160	135	173.5	193.5	130	96/110	6.5

8 Ordering Notice

8.1 Please specify the following items when ordering:

8.1.1 Complete name and model of the contactor.

8.1.2 Rated control power voltage and frequency or code of the coil.

8.1.3 F4 auxiliary contact set shall be specified separately if required.

8.1.4 Order quantity.

8.2 Order example: CJX2-0910 AC contactor.

Coil voltage 220V 50Hz 10 units F4-22 5pcs.