

# Motor control and protection Inverter & Soft-Starter

## Contactor



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AC Contactor



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Mechanical Interlocking  
Contactor

# Motor control and protection Inverter & Soft-Starter

## Starter



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Motor Starter



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## Relay



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## Soft Starter



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**YCQR2**  
Soft Starter

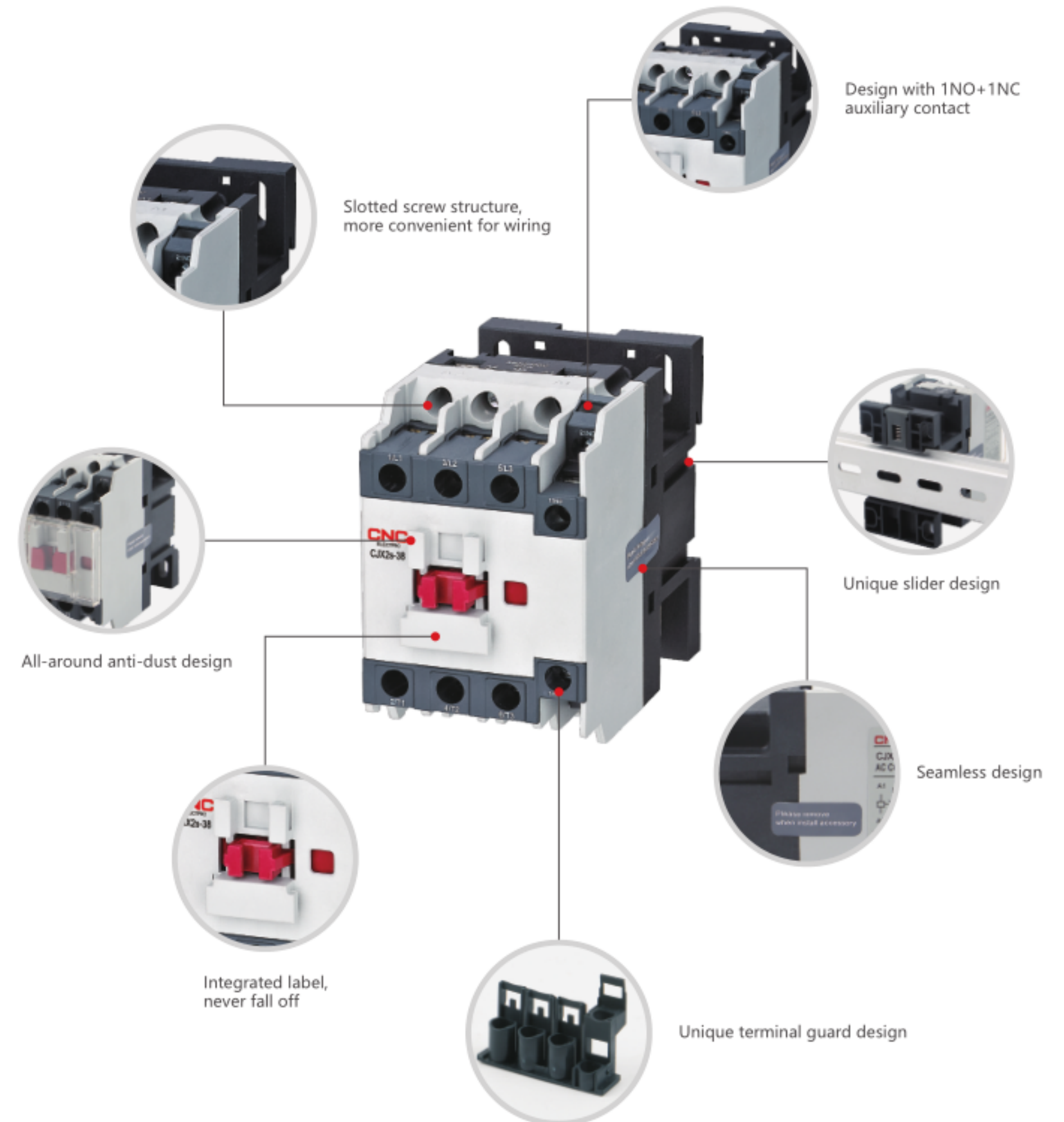
# CJX2s Series AC Contactor



- More auxiliary contacts
- Suitable for larger voltage fluctuation
- Super environment adaptability

## CJX2s AC Contactor

### Product Structure Analysis Diagram





## CJX2s AC Contactor

### Product Overview

CJX2s series AC Contactor with novel appearance and compact structure is suitable for using starting & controlling the AC motor frequently, switching on and off the circuit at a long distance. It is used in combination with thermal relay to compose a magnetic motor starter.

Standard: IEC 60947-1, IEC 60947-4-1.

### Specifications

- Rated operation current(Ie): 9-95A;
- Rated operation voltage(Ue): 220V~690V;
- Rated insulation voltage: 690V;
- Poles: 3P;
- Installation: Din rail and screw installation

### Operating and Installation Conditions

Type	Operating and Installation Conditions
Installation category	III
Pollution level	3
Certification	CE, CB, CCC, TUV
Protection degree	CJX2s-09~38: IP20; CJX2s-40~95: IP10
Ambient temperature	limit of temperature: -35°C~+70°C, normal temperature: -5°C~+40°C, The average no more than +35°C within 24 hours. If not in normal operating temperature range, please refer to "Instructions for abnormal environment"
Altitude	≤2000m
Ambient temperature	The maximum temperature of 70 degrees, the air relative humidity not exceed 50%, under lower temperature can allow for higher relative humidity. If the temperature is 20°C, the air relative humidity could up to 90%, Special measures should be taken for occasional condensation due to humidity changes.
Installation position	Inclination between installation surface and vertical surface should not exceed ±5°
Shock vibration	Products should be installed and used without significant shake, shock and vibration place.

## CJX2s AC Contactor

### Specifications

#### CJX2s Specifications

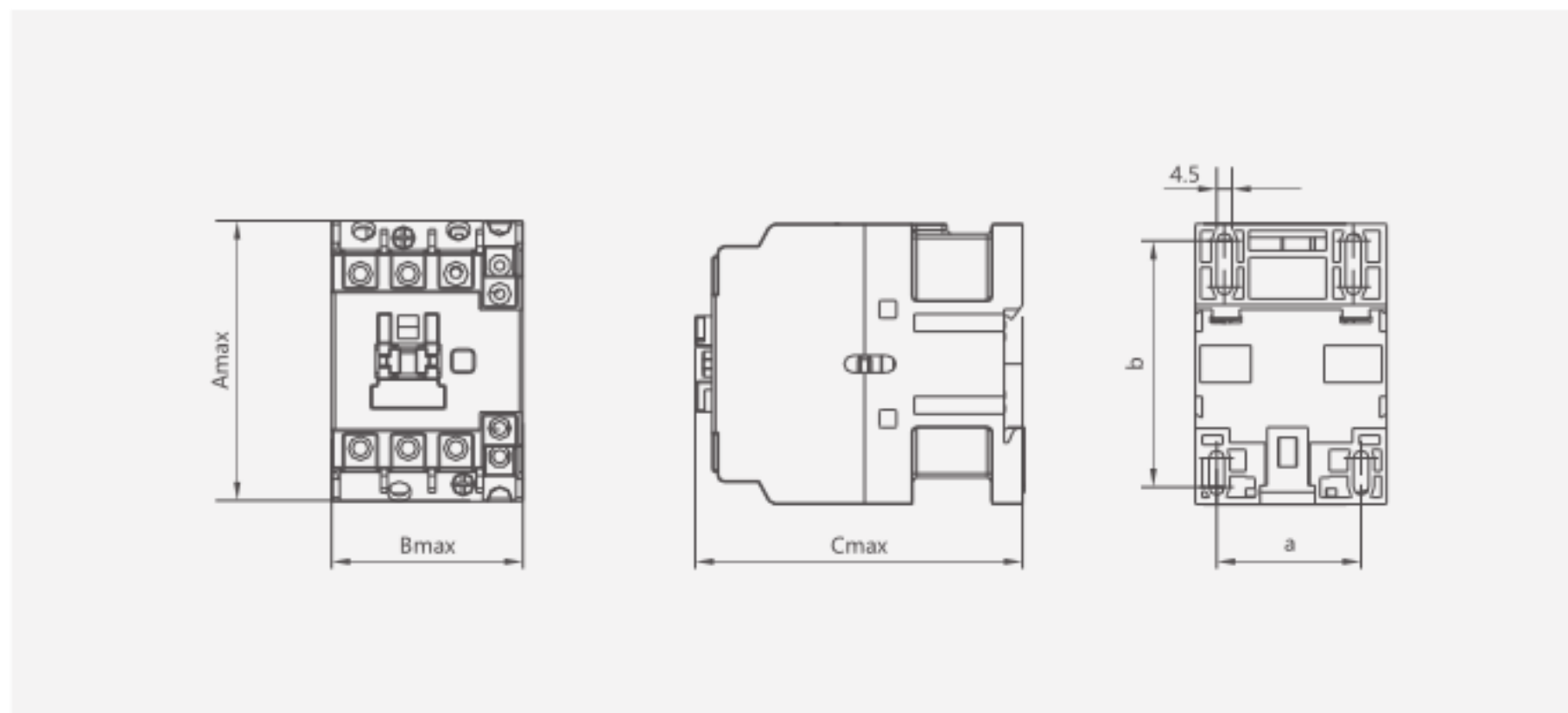


Type	CJX2s-09	CJX2s-12	CJX2s-18	CJX2s-25	CJX2s-32	CJX2s-38	CJX2s-40	CJX2s-50	CJX2s-65	CJX2s-80	CJX2s-95		
Main circuit characteristic													
Poles	3P												
Rated insulation voltage(Ui)	V 690												
Rated operating voltage(Ue)	V 380/400, 660/690												
Rated thermal current(Ith), AC-1													
	20	20	32	40	50	50	60	80	80	125	125		
Rated operation current(Ie)	AC-3,380/400V	A	9	12	18	25	32	38	40	50	65	80	95
	AC-3,660/690V	A	6.6	8.9	12	18	22	22	34	39	42	49	49
	AC-4,380/400V	A	3.5	5	7.7	8.5	12	14	18.5	24	28	37	44
	AC-4,660/690V	A	1.5	2	3.8	4.4	7.5	8.9	9	12	14	17.3	21.3
Rated operational power(Pe)	AC-3,380/400V	kW	4	5.5	7.5	11	15	18.5	18.5	22	30	37	45
	AC-3,660/690V	kW	5.5	7.5	10	15	18.5	18.5	30	33	37	45	45
	AC-4,380/400V	kW	1.5	2.2	3.3	4	5.4	5.5	7.5	11	15	18.5	22
	AC-4,660/690V	kW	1.1	1.5	3	3.7	5.5	6	7.5	10	11	15	18.5
Mechanical life													
	1200			1000			900			650			
Electrical life	AC-3	10000 times	110			90			65				
	AC-4		22			17			11				
Frequency of operation	AC-3	times/hour	1200			600			300				
	AC-4		300										
Connecting capability of main circuit terminal													
Flexible wire	1 wire	mm <sup>2</sup>	1...4			1.5...6			2.5...25		4...50		
No terminal	2 wire	mm <sup>2</sup>	1...4			1.5...6			2.5...16		4...25		
Flexible wire	1 wire	mm <sup>2</sup>	1...4			1...6			2.5...25		4...50		
With terminals	2 wire	mm <sup>2</sup>	1...2.5			1...4			2.5...10		4...16		
Hard wire	1 wire	mm <sup>2</sup>	1...4			1.5...6	1.5...10		2.5...25		4...50		
No terminal	2 wire	mm <sup>2</sup>	1...4			1.5...			2.5...10		4...25		
Fastening torque		N·m	1.2			1.8			5		9		
Coil													
Rated control voltage(Uc)	50Hz	V	24, 36, 48, 110, 127, 220/230, 240, 380/400, 415, 440										
	50/60Hz	V	24, 36, 48, 110, 127, 220/230, 240, 380/400, 415, 440										
Allowed control circuit voltage(Uc)	Operation	V	Installation inclination angle ±22.5°: 85%~110%Uc; Installation inclination angle±5°: 70%~120%										
	Release	V	Installation inclination angle ±22.5°: 20%~75%Uc; Installation inclination angle±5°: 20%~65%										
Power consumption of coil	Actuation	VA	60			70			200		200		
	Keep	VA	6-9.5			6-9.5			15-20		15-20		
	Consumption	W	1-3			1-3			6-10		6-10		
Auxiliary contacts													
Auxiliary contacts specification	A	11											
Rated thermal current (Ith)	A	10											
Rated operating voltage (Ue)	AC	V	380										
	DC	V	220										
Rated control capacit	AC-15	VA	360										
	DC-13	W	33										
Certification	CCC, CE, TUV, CB												

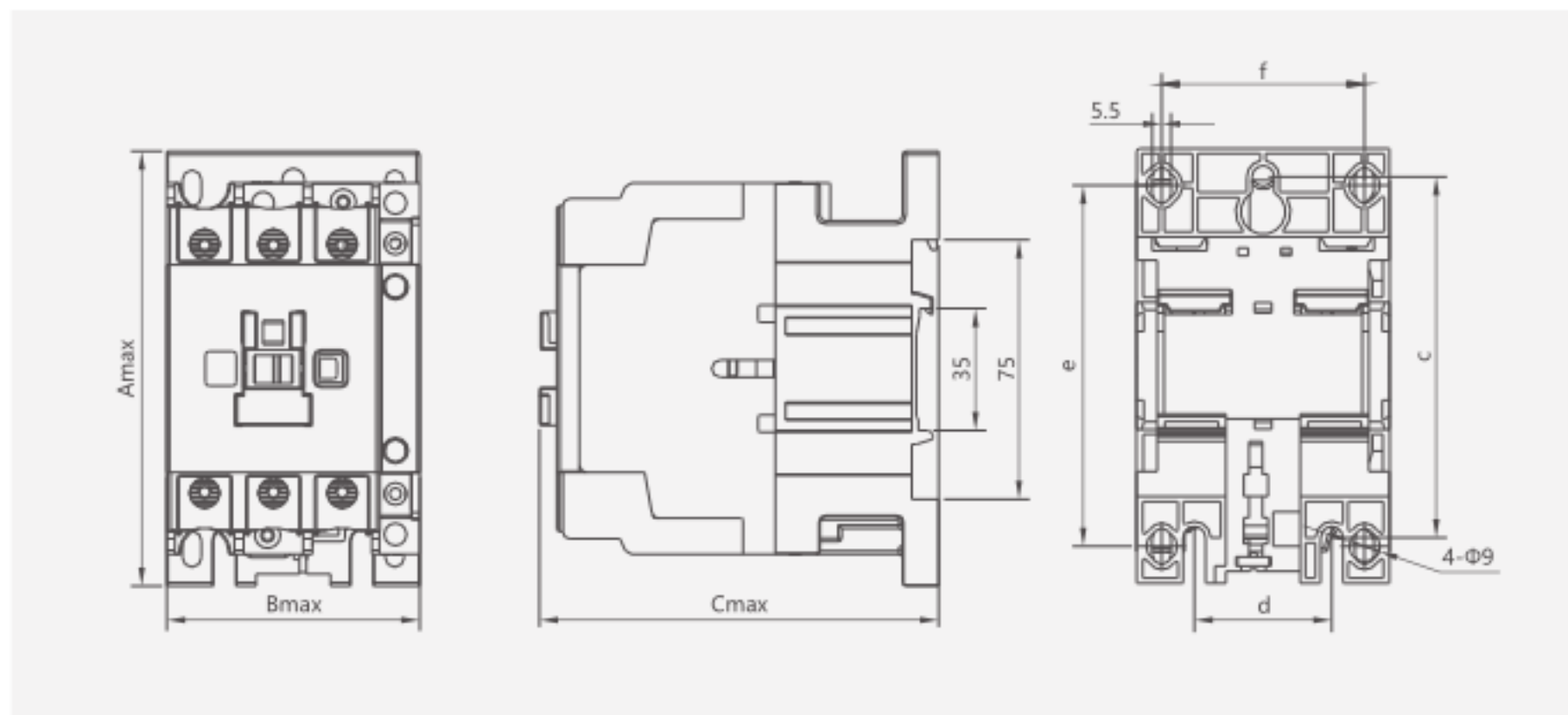
### CJX2s AC Contactor

#### Overall and Mounting

CJX2s-09~38



CJX2s-40~95



Type	Amax	Bmax	Cmax	a	b	c	d	e	f
CJX2s-09, 12, 18	74.5	45.5	85.5	35	50/60	-	-	-	-
CJX2s-25, 32, 38	83	56.5	97	40	50/70	-	-	-	-
CJX2s-40, 50, 65	127.5	74.5	117	-	-	105	40	100/110	59
CJX2s-80, 95	127.5	85.5	125.5	-	-	105	40	100/110	67

### CJX2s AC Contactor

F4-D, LA2-D, LA3-D Contact Block

Type	Product	Configuration of contacts	
		Number of N/O contact	Number of N/C contact
F4-DN20 F4-DN11 F4-DN02		2 1 0	0 1 2
F4-DN40 F4-DN31 F4-DN22 F4-DN13 F4-DN04		4 3 2 1 0	0 1 2 3 4
Type		Time-delay range	Number of time-delay contacts
LA2-DT0 LA2-DT2 LA2-DT4		0.1s~3s 0.1s~30s 10s~180s	NO+NC NO+NC NO+NC
LA3-DR0 LA3-DR2 LA3-DR4		0.1s~3s 0.1s~30s 10s~180s	NO+NC NO+NC NO+NC

LX1-D Coil

Type	Product	Coil voltage Us(V) Frequency (Hz)	Coil voltage Us(V)													
			24	36	42	48	110	127	220	230	240	380	400	415	440	600
LX1-D2		50Hz	B5	C5	D5	E5	F5	G5	M5	P5	U5	Q5	V5	N5	R5	X5
LX1-D4		60Hz	B6	C6	D6	E6	F6	G6	M6	P6	U6	Q6	V6	N6	R6	X6
LX1-D6		50/60Hz	B7	C7	D7	E7	F7	G7	M7	P7	U7	Q7	V7	N7	R7	X7



## CJX2s AC Contactor

Derived Products When The Contactor is Assembled With Following Accessory Module

Derived products	Contactor	Accessorial modular	Picture
Time-delay contactor			
Reversing contactor			
Magnetic starter			
Auxiliary Contact			
Changeover capacitor AC contactor			
dust cover			

## CJX2s-N Mechanical Interlocking Contactor

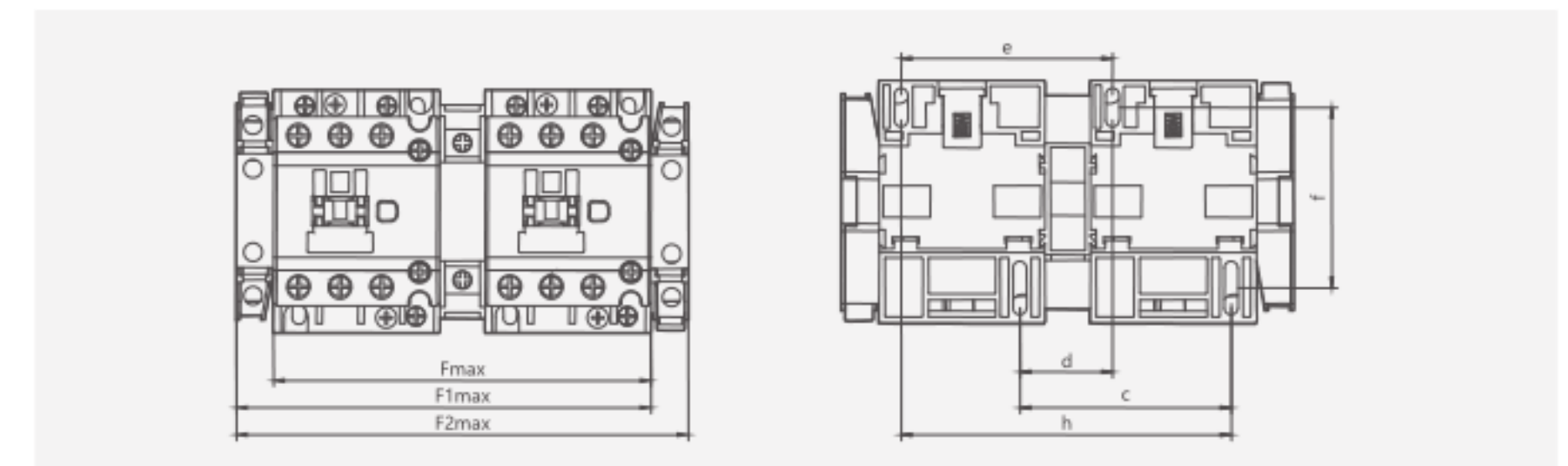


### Specifications

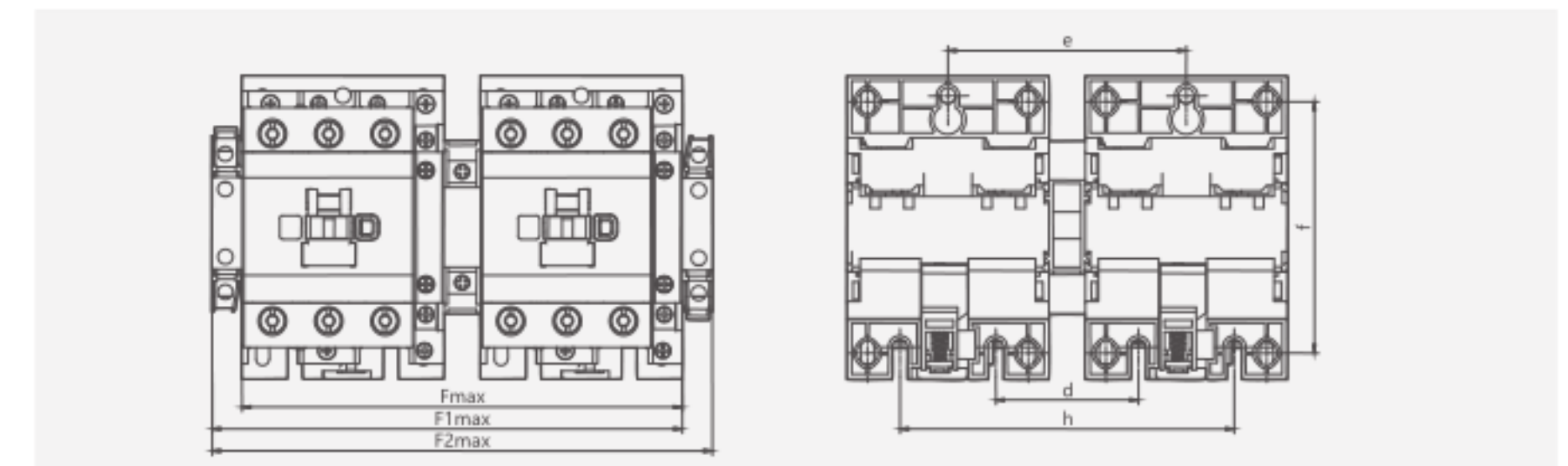
Type	Rated operation current(Ie)(A)	Rated thermal current (Ith)(A)	Rated operational power in category AC-3 (kW)	
			380V	660V
CJX2s-09N	9	20	4	5.5
CJX2s-12N	12	20	5.5	7.5
CJX2s-18N	18	32	7.5	10
CJX2s-25N	25	40	11	15
CJX2s-32N	32	50	15	18.5
CJX2s-38N	38	50	15	18.5
CJX2s-40N	40	50	18.5	30
CJX2s-50N	50	60	22	33
CJX2s-65N	65	80	30	37
CJX2s-80N	80	95	37	45
CJX2s-95N	95	95	45	55

### Outline and installation dimensions

CJX2s-09~38N



CJX2s-40~95N



Type	Fmax	F1max	F2max	c	d	e	f	h
CJX2s-09N, 12N, 18N	107	120	131	60	25	60	50/60	95
CJX2s-25N, 32N, 38N	129	142	153	71	31.5	71	50/60	111.5
CJX2s-40N, 50N, 65N	163	180	193	-	50	90	100/110	130
CJX2s-80N, 95N	186	202	215	-	60	100	100/110	140



## CJX2i AC Contactor

### Product Overview

CJX2i series AC Contactor with novel appearance and compact structure is suitable for using starting & controlling the AC motor frequently, switching on and off the circuit at a long distance. It is used in combination with thermal relay to compose a magnetic motor starter.

Standard: IEC 60947-1, IEC 60947-4-1.

### Specifications

- Rated operation current(Ie): 9-95A;
- Rated operation voltage(Ue): 220V~690V;
- Rated insulation voltage: 690V;
- Poles: 3P;
- Installation: Din rail and screw installation

### Operating and Installation Conditions

Type	Operating and Installation Conditions
Installation category	III
Pollution level	3
Certification	CE, CB, CCC, TUV
Protection degree	CJX2i-09~38: IP20; CJX2i-40~95: IP10
Ambient temperature	limit of temperature: -35°C~+70°C, normal temperature: -5°C~+40°C, The average no more than +35°C within 24 hours. If not in normal operating temperature range, please refer to "Instructions for abnormal environment"
Altitude	≤2000m
Ambient temperature	The maximum temperature of 70 degrees, the air relative humidity not exceed 50%, under lower temperature can allow for higher relative humidity. If the temperature is 20°C, the air relative humidity could up to 90%, Special measures should be taken for occasional condensation due to humidity changes.
Installation position	Inclination between installation surface and vertical surface should not exceed ±5°
Shock vibration	Products should be installed and used without significant shake, shock and vibration place.

## CJX2i AC Contactor

### Specifications

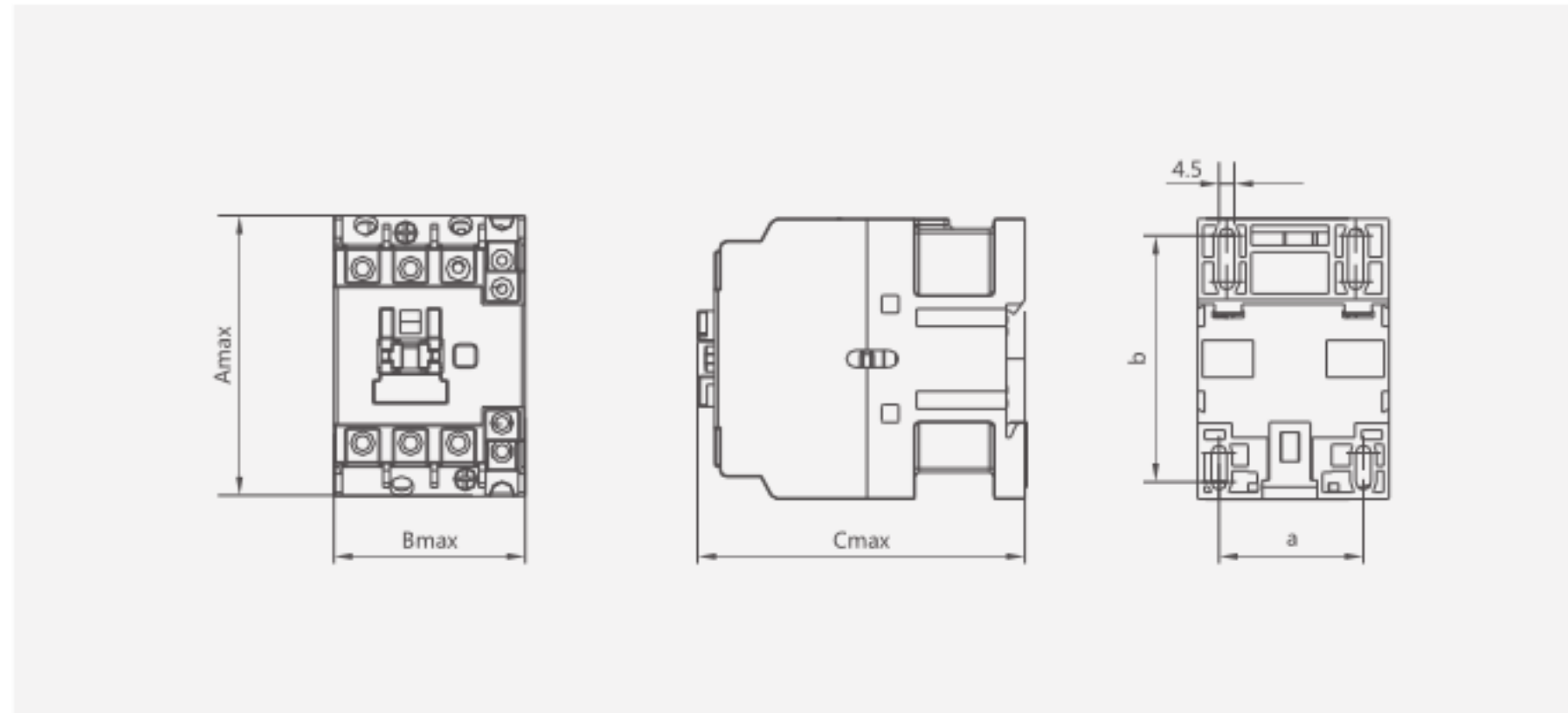
CJX2i Specifications															
Appearance															
Type	CJX2i-09	CJX2i-12	CJX2i-18	CJX2i-25	CJX2i-32	CJX2i-38	CJX2i-40	CJX2i-50	CJX2i-65	CJX2i-80	CJX2i-95				
Main circuit characteristic															
Poles	3P														
Rated insulation voltage(Ui)	V 690														
Rated operating voltage(Ue)	V 380/400, 660/690														
Rated thermal current(Ith), AC-1															
	20	20	32	40	50	50	60	80	80	125	125				
Rated operation current(Ie)	AC-3,380/400V	A	9	12	18	25	32	38	40	50	65	80	95		
	AC-3,660/690V	A	6.6	8.9	12	18	22	22	34	39	42	49	49		
	AC-4,380/400V	A	3.5	5	7.7	8.5	12	14	18.5	24	28	37	44		
	AC-4,660/690V	A	1.5	2	3.8	4.4	7.5	8.9	9	12	14	17.3	21.3		
Rated operational power(Pe)	AC-3,380/400V	kW	4	5.5	7.5	11	15	18.5	18.5	22	30	37	45		
	AC-3,660/690V	kW	5.5	7.5	10	15	18.5	18.5	30	33	37	45	45		
	AC-4,380/400V	kW	1.5	2.2	3.3	4	5.4	5.5	7.5	11	15	18.5	22		
	AC-4,660/690V	kW	1.1	1.5	3	3.7	5.5	6	7.5	10	11	15	18.5		
Mechanical life															
	10000			1200			1000			900			650		
Electrical life	AC-3	10000	110			90			65						
	AC-4	22	22			17			11						
Frequency of operation	AC-3	times/hour	1200			600			300						
	AC-4	300	300			300			300						
Connecting capability of main circuit terminal															
Flexible wire	1 wire	mm <sup>2</sup>	1...4			1.5...6			2.5...25			4...50			
No terminal	2 wire	mm <sup>2</sup>	1...4			1.5...6			2.5...16			4...25			
Flexible wire	1 wire	mm <sup>2</sup>	1...4			1...6			2.5...25			4...50			
With terminals	2 wire	mm <sup>2</sup>	1...2.5			1...4			2.5...10			4...16			
Hard wire	1 wire	mm <sup>2</sup>	1...4			1.5...6			1.5...10			2.5...25			
No terminal	2 wire	mm <sup>2</sup>	1...4			1.5...			2.5...10			4...25			
Fastening torque	N·m		1.2			1.8			5			9			
Coil															
Rated control voltage(Us)	50Hz	V	24, 36, 48, 110, 127, 220/230, 240, 380/400, 415, 440												
	50/60Hz	V	24, 36, 48, 110, 127, 220/230, 240, 380/400, 415, 440												
Allowed control circuit voltage(Us)	Operation	V	Installation inclination angle ±22.5°: 85%~110%Us; Installation inclination angle±5°: 70%~120%												
	Release	V	Installation inclination angle ±22.5°: 20%~75%Us; Installation inclination angle±5°: 20%~65%												
Power consumption of coil	Actuation	VA	60			70			200			200			
	Keep	VA	6-9.5			6-9.5			15-20			15-20			
	Consumption	W	1-3			1-3			6-10			6-10			
Auxiliary contacts															
Auxiliary contacts specification	A		11												
Rated thermal current (Ith)	A		10												
Rated operating voltage (Ue)	AC	V	380												
	DC	V	220												
Rated control capacit	AC-15	VA	360												
	DC-13	W	33												
Certification	CCC, CE, TUV, CB														



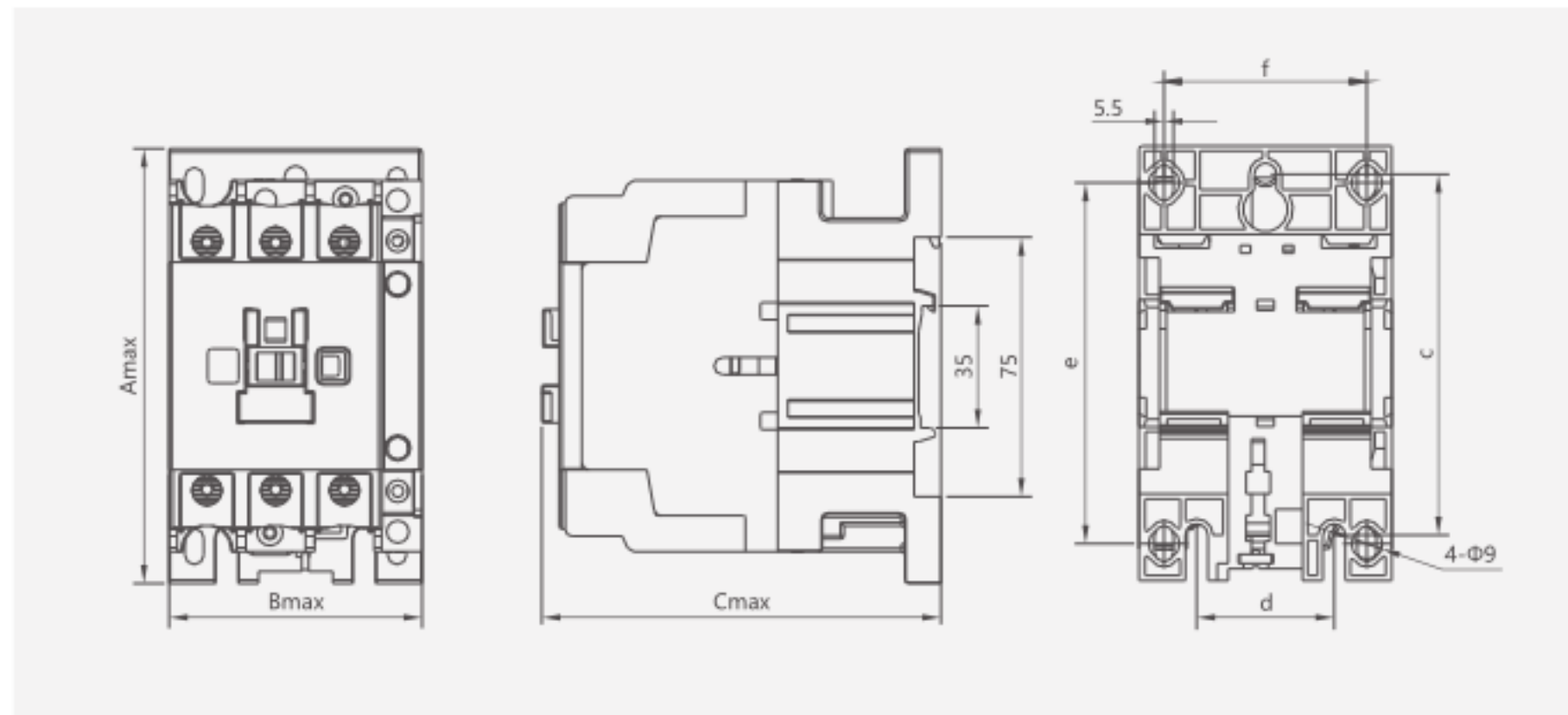
## CJX2i AC Contactor

### Overall and Mounting

CJX2i-09~38



CJX2i-40~95



Type	Amax	Bmax	Cmax	a	b	c	d	e	f
CJX2i-09, 12, 18	74.5	45.5	85.5	35	50/60	-	-	-	-
CJX2i-25, 32, 38	83	56.5	97	40	50/70	-	-	-	-
CJX2i-40, 50, 65	127.5	74.5	117	-	-	105	40	100/110	59
CJX2i-80, 95	127.5	85.5	125.5	-	-	105	40	100/110	67

## CJX2i AC Contactor

Derived Products When The Contactor is Assembled With Following Accessory Module

Derived products	Contactor	Accessorial modular	Picture
Time-delay contactor		+	→
Reversing contactor		+	→
Magnetic starter		+	→
Auxiliary Contact		+	→
Changeover capacitor AC contactor		+	→
dust cover		+	→

## CJX2i-N Mechanical Interlocking Contactor

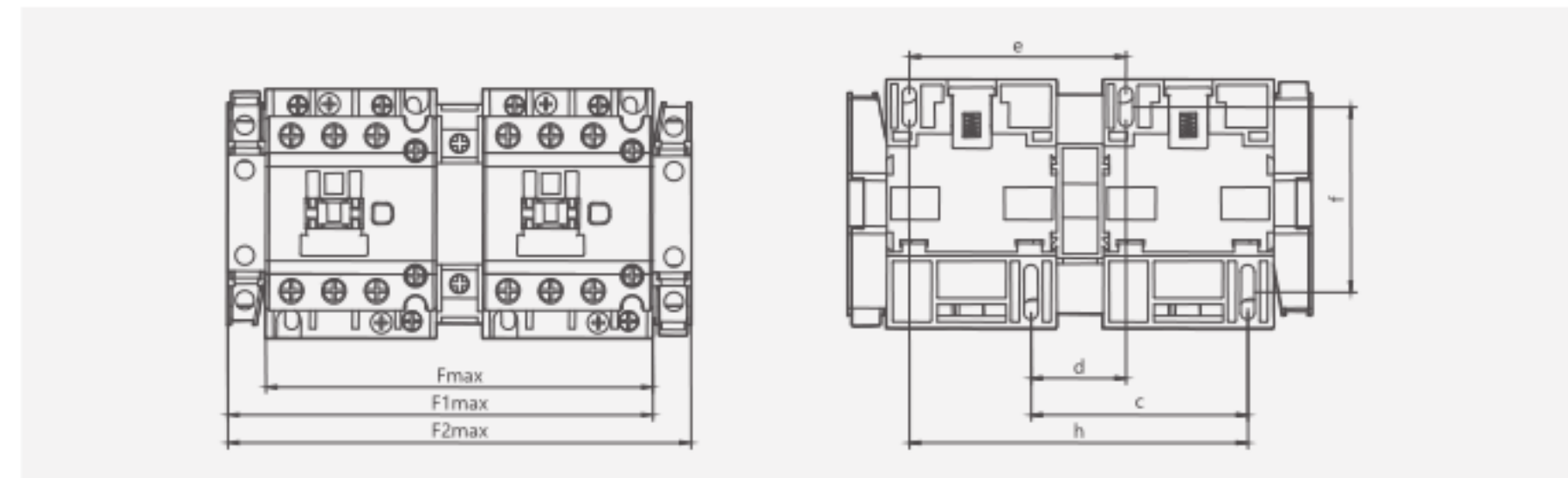
### Specifications

Type	Rated operation current(Ie)(A)	Rated thermal current (Ith)(A)	Rated operational power in category AC-3 (kW)	
			380V	660V
CJX2i-09N	9	20	4	5.5
CJX2i-12N	12	20	5.5	7.5
CJX2i-18N	18	32	7.5	10
CJX2i-25N	25	40	11	15
CJX2i-32N	32	50	15	18.5
CJX2i-38N	38	50	15	18.5
CJX2i-40N	40	50	18.5	30
CJX2i-50N	50	60	22	33
CJX2i-65N	65	80	30	37
CJX2i-80N	80	95	37	45
CJX2i-95N	95	95	45	55

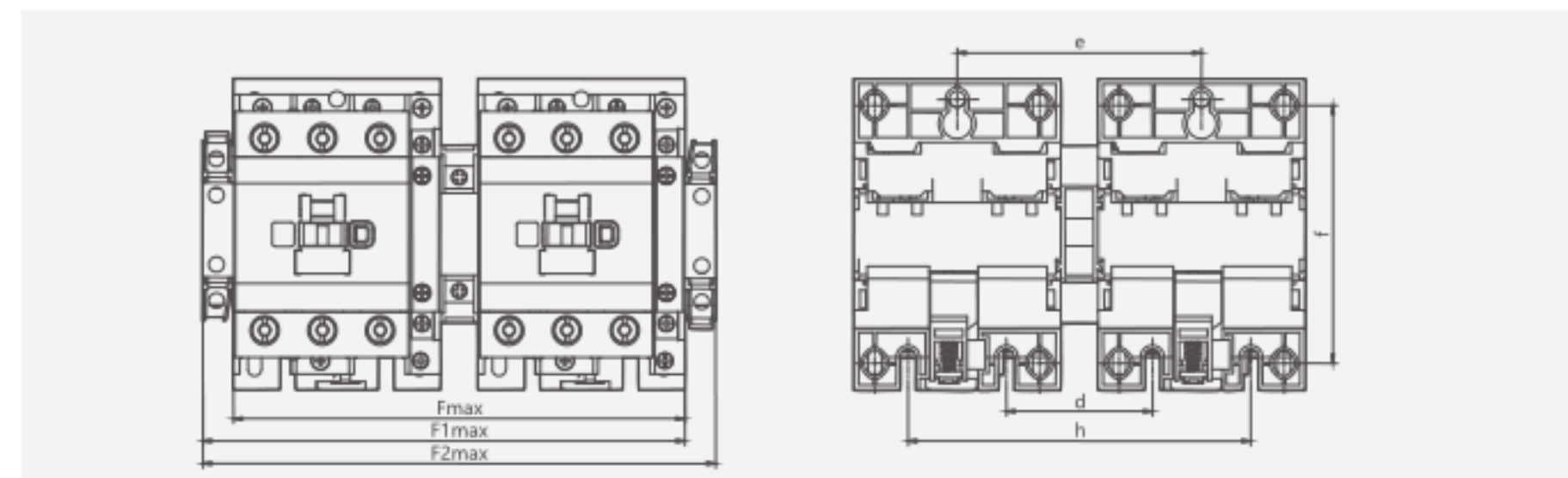
## CJX2i-N Mechanical Interlocking Contactor

### Outline and installation dimensions

CJX2i-09~38N



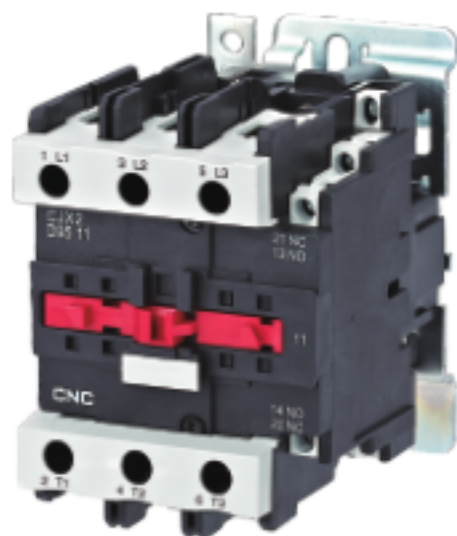
CJX2i-40~95N



Type	Fmax	F1max	F2max	c	d	e	f	h
CJX2i-09N, 12N, 18N	107	120	131	60	25	60	50/60	95
CJX2i-25N, 32N, 38N	129	142	153	71	31.5	71	50/60	111.5
CJX2i-40N, 50N, 65N	163	180	193	-	50	90	100/110	130
CJX2i-80N, 95N	186	202	215	-	60	100	100/110	140



## CJX2 AC Contactor



### General

CJX2 series AC Contactor is suitable for using in the circuits of rated voltage up to 660V AC 50Hz or 60Hz, rated current up to 95A, for making, breaking, frequently starting & controlling the AC motor. Combined with the auxiliary contact block, timer delay & machine-interlocking device etc, it becomes the delay contactor, mechanical interlocking contactor, star-delta starter. With the thermal relay, it is combined into the electromagnetic starter. The Contactor is produced according to IEC 60947-4.

### Coil voltage of contactor and code

Coil voltage Us(V)	24	36	42	48	110	220	230	240	380	400	415	440	600
50Hz	B5	C5	D5	E5	F5	M5	P5	U5	Q5	V5	N5	R5	X5
60Hz	B6	C6	D6	E6	F6	M6	P6	U6	Q6	V6	N6	R6	X6
50/60Hz	B7	C7	D7	E7	F7	M7	P7	U7	Q7	V7	N7	R7	X7

### Type designation

Name	Rated current	Auxiliary contact	Pole number	Coil voltage	Frequency
CJX2	<input type="text"/>	<input type="text"/>	<input type="text"/>	*	-

Rated current (A)	Auxiliary contact		Type
	Normal open (NO)	Normal close (NC)	
9	1	-	CJX2-0910*
	-	1	CJX2-0901*
12	1	-	CJX2-1210*
	-	1	CJX2-1201*
18	1	-	CJX2-1810*
	-	1	CJX2-1801*
25	1	-	CJX2-2510*
	-	1	CJX2-2501*
32	1	-	CJX2-3210*
	-	1	CJX2-3201*
40	1	1	CJX2-4011*
50	1	1	CJX2-5011*
65	1	1	CJX2-6511*
80	1	1	CJX2-8011*
95	1	1	CJX2-9511*

## CJX2 AC Contactor

### Specifications

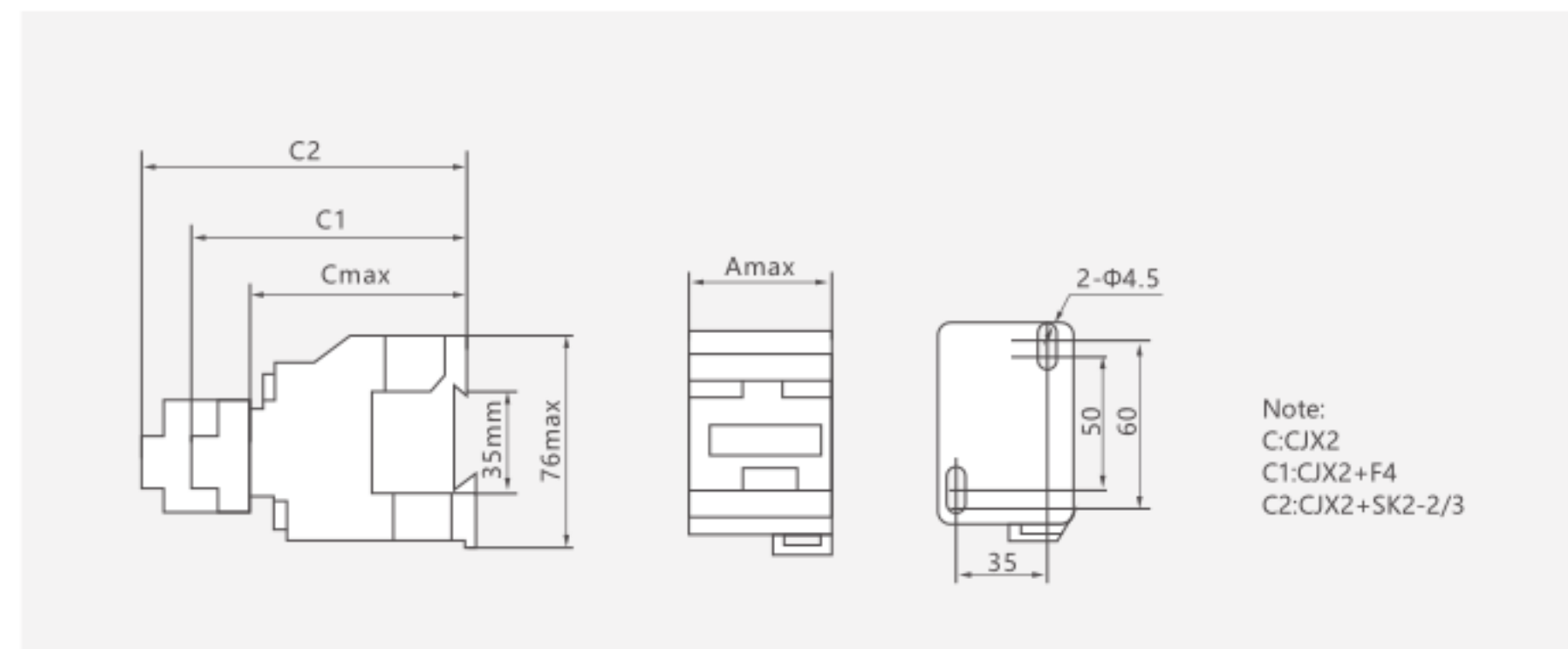
Type			CJX2-09	CJX2-12	CJX2-18	CJX2-25	CJX2-32	CJX2-40	CJX2-50	CJX2-65	CJX2-80	CJX2-95
Rated insulation voltage (Ui)		V	690									
Rated thermal current (Ith)		A	20	20	32	40	50	60	80	80	95	95
Rated operation current (Ie)	AC-3, 380V	A	9	12	18	25	32	40	50	65	80	95
	AC-3, 660V	A	6.6	8.9	12	18	21	34	39	42	49	55
	AC-4, 380V	A	3.5	5	7.7	8.5	12	18.5	24	28	37	41
	AC-4, 660V	A	1.5	2	3.8	4.4	7.5	9	12	14	17.3	21.3
Max. power of 3 phase motor controlled	AC-3, 220V	kW	2.2	3	4	5.5	7.5	11	15	18.5	22	25
	AC-3, 380V	kW	4	5.5	7.5	11	15	18.5	22	30	37	45
	AC-3, 660V	kW	5.5	7.5	10	15	18.5	30	33	37	45	55
Electrical life	AC-3	10000 t	100				80	80		60		
	AC-4	10000 t	20				20	15		10		
Mechanical life		10000 t	1000				800	800		600		
Operation frequency	AC-3	t/h	1200				600	600		600		
	AC-4	t/h	300				300	300		300		
Matching fuse type			RT16-20	RT16-20	RT16-32	RT16-40	RT16-50	RT16-63	RT16-80	RT16-80	RT16-100	RT16-125
Matching thermal relay type			JR28-25	JR28-25	JR28-25	JR28-25	JR28-36	JR28-93	JR28-93	JR28-93	JR28-93	JR28-93
Wiring capacity		mm <sup>2</sup>	1.5	1.5	2.5	4	6	10	16	16	25	35
Coil												
Control power voltage (Us)	AC	V	36, 110, 127, 220, 380									
Allowed control circuit voltage	Close	V	85%~110%Us									
	Open	V	20%~75%Us(AC)									
Auxiliary contact	Close	VA	70			110		200				
	Keeping	VA	8			11		20				
	Loss power	W	1.8~2.7			3~4		6~10				
Rated thermal current (Ith)		A	10									
Rated operation voltage (Ue)	AC-15	V	380									
	DC-13	V	220									
Rated control capacity	AC-15	VA	360									
	DC-13	W	33									

Note: 3 pole is normal type, not remarked in the type name.

## CJX2 AC Contactor

### Overall and mounting dimensions(mm)

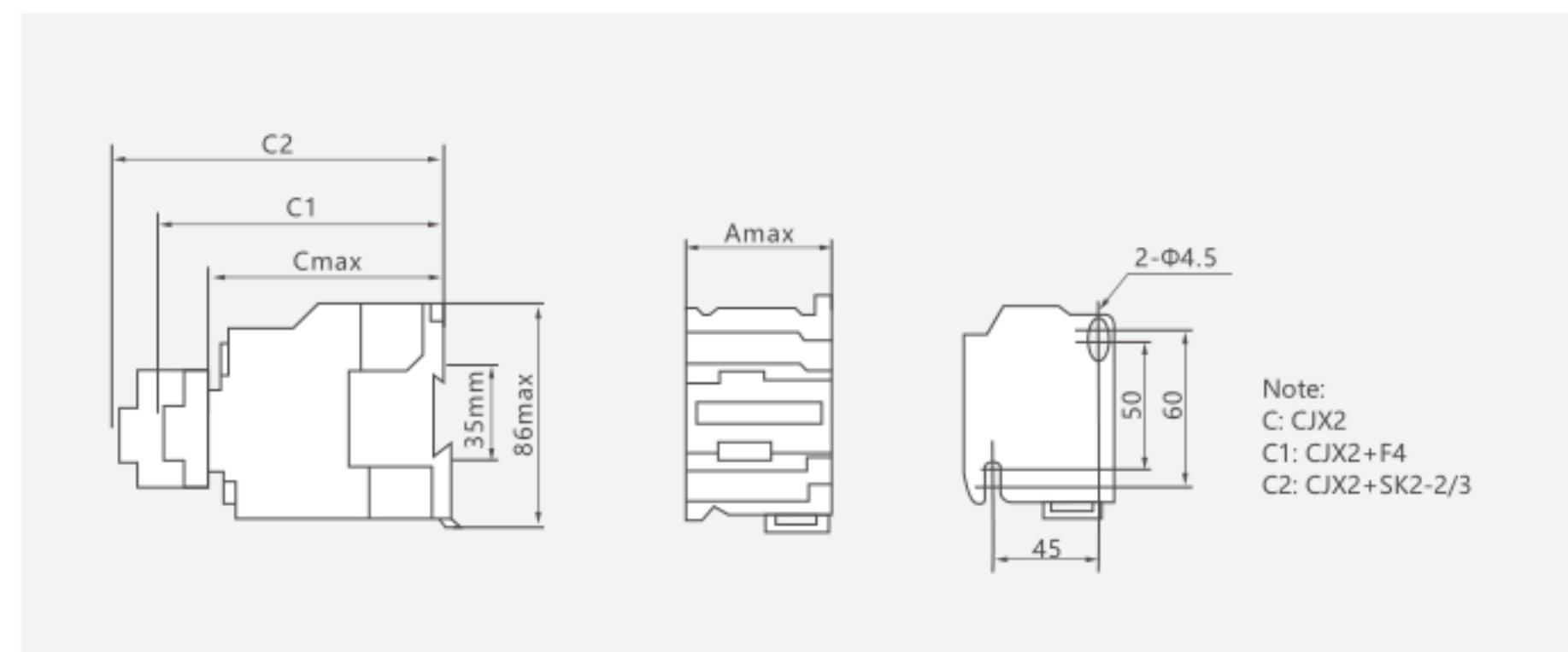
Pic.1 CJX2-09,12,18



Unit: mm

Type	Amax	Cmax	C1	C2
CJX2-09,12	47	82	115	134
CJX2-18	47	87	120	139

Pic. 2 CJX2-25,32

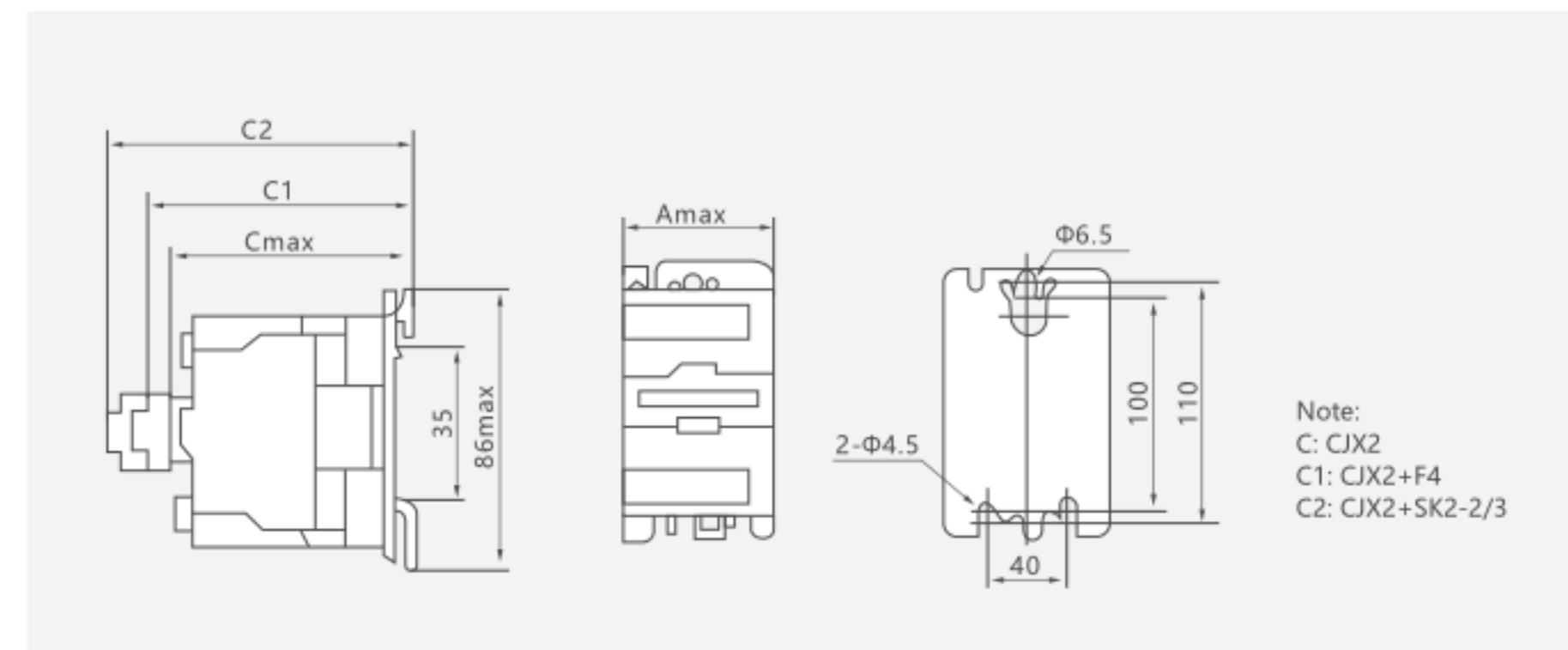


Unit: mm

Type	Amax	Cmax	C1	C2
CJX2-25	59	97	130	149
CJX2-32	59	102	135	154

## CJX2 AC Contactor

Pic. 3 CJX2-40~95



Unit: mm

Type	Amax	Cmax	C1	C2
CJX2-40,50,65	79	116	149	168
CJX2-80,95	87	127	160	179





### Specifications

Item	Data
Ambient temperature	-5°C~+40°C
Altitude	≤2000m
Relative humidity	The maximum temperature of 40 degrees, the air relative humidity not exceed 50%, at a lower temperature can allow for a higher relative humidity, if humidity changes as a result of occasional gel generated, should eliminate it.
Pollution level	3
Installation category	III
Installation position	The installation degree of the tilt and vertical plane should not exceed ±22.5°, should be installed in place with no significant impact shaking and vibration
Installation	The installation of fastening screws can be used, the CJX1-9~38 contactor can also be installed on 35mm standard DIN rail.

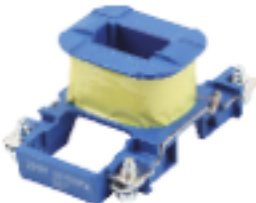




### CJX2 AC Contactor

F4-D, LA2-D, LA3-D Contact Block




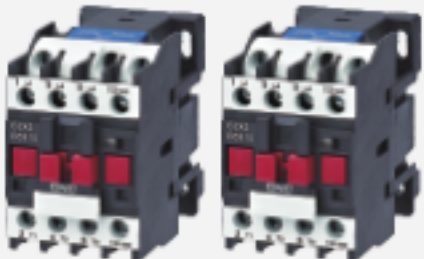














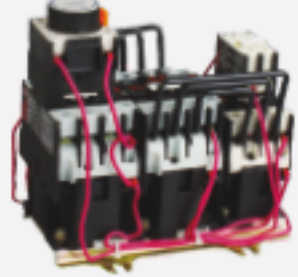
Type	Product	Configuration of contacts	
		Number of N/O contact	Number of N/C contact
F4-DN20 F4-DN11 F4-DN02		2 1 0	0 1 2
F4-DN40 F4-DN31 F4-DN22 F4-DN13 F4-DN04		4 3 2 1 0	0 1 2 3 4
Type		Time-delay range	Number of time-delay contacts
LA2-DT0 LA2-DT2 LA2-DT4		0.1s~3s 0.1s~30s 10s~180s	NO+NC NO+NC NO+NC
LA3-DR0 LA3-DR2 LA3-DR4		0.1s~3s 0.1s~30s 10s~180s	NO+NC NO+NC NO+NC

LX1-D Coil

Type	Product	Coil voltage Us(V) Frequency (Hz)	Frequency													
			24	36	42	48	110	127	220	230	240	380	400	415	440	600
LX1-D2		50Hz	B5	C5	D5	E5	F5	G5	M5	P5	U5	Q5	V5	N5	R5	X5
LX1-D4		60Hz	B6	C6	D6	E6	F6	G6	M6	P6	U6	Q6	V6	N6	R6	X6
LX1-D6		50/60Hz	B7	C7	D7	E7	F7	G7	M7	P7	U7	Q7	V7	N7	R7	X7

### CJX2 AC Contactor

Derived Products When The Contactor is Assembled With Following Accessory Module

Derived products	Contactor	Accessorial modular	Picture
Time-delay contactor			
Reversing contactor			
Magnetic starter			
Auxiliary Contact			
Changeover capacitor AC contactor			
Star-delta contactor		 	



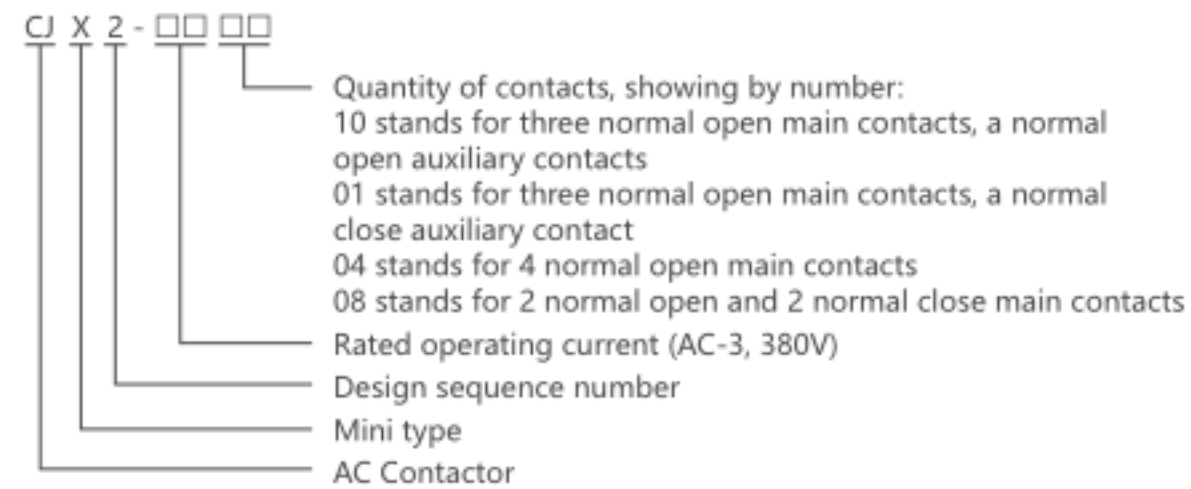
## CJX2-K AC Contactor

### CJX2-K AC Contactor

#### General

CJX2-K series AC Contactor is suitable for using in the circuits the rated voltage up to 660V AC 50Hz or 60Hz, rated current up to 12A in AC-3 using category , for making & breaking, frequently starting & controlling the AC motor. The contactor is produced according to IEC 60947-4.

#### Type designation



#### Specifications

Type		CJX2-K06	CJX2-K09	CJX2-K12
Rated operation voltage (Ue)	V	660	660	660
Rated thermal current (Ith)	A	20	20	20
Rated operation current (Ie)	AC-3, 380V	A	6	9
	AC-3, 660V	A	2.6	3.5
Max. power of 3 phase motor controlled	AC-3, 220V	kW	1.5	2.2
	AC-3, 380V	kW	2.2	4
	AC-3, 660V	kW	3	5.5
Electrical life	AC-3	10000 t	100	
	AC-4	10000 t	20	
Mechanical life		10000 t	1000	
Operation frequency	AC-3	t/h	1200	
	AC-4	t/h	300	
Matching fuse type			NT00-16	
Wiring capacity		mm <sup>2</sup>	1.5	
Coil				
Control power voltage (Us)	AC	V	24, 36, 48, 110, 220, 380	
Allowed control	Close	V	85%~110%Us	
	Open	V	20%~75%Us(AC)	
Coil power	Loss power	W	2	

## CJ19i(CJ19s) Contactor

### Product Structure

**Opening design**  
It's convenient for customers to tighten and loosen screws at any time.

**Unique slider design**

- Turn tedious into simplicity, improve the efficiency of installation and disassembly.
- Realize tool-free installation and disassembly.
- The original tedious disassembly becomes very simply.

**Fire resistance shell**  
High temperature resistance, corrosion resistance, safety and security.

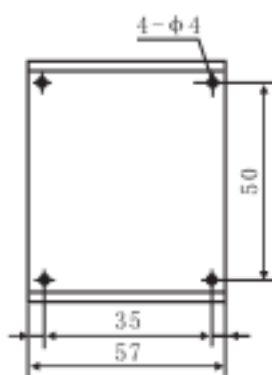
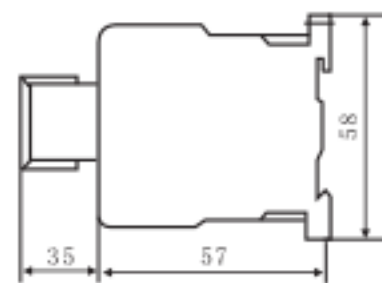
**Integrated signage, difficult to fall off.**

**Dust prevention**  
Add dust proof sticker, easy to deal with dusty environment, intimate care.

**Pure copper coils**  
Automatic winding, enamelled wire above QA-180

**Customized silicon steel sheet**  
DW600, big iron core, actuate more smoothly.

**Silver alloy contact**  
Stronger electrical conductivity, more sensitive, not easy oxidation.





## CJ19i(CJ19s) Contactor

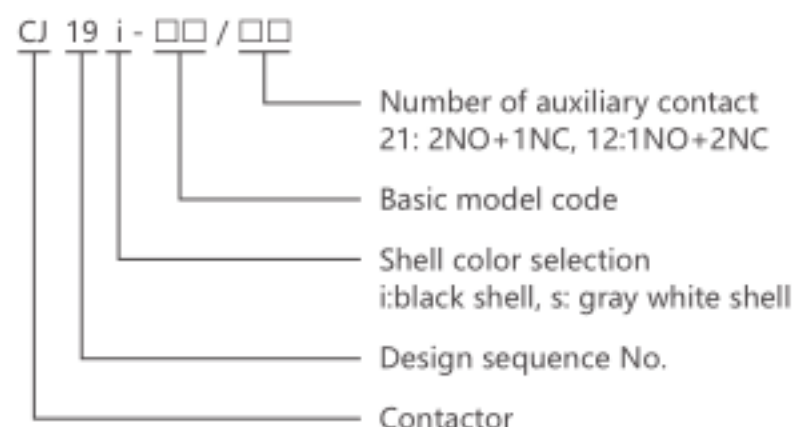


### General

CJ19i contactor for capacitor switching (hereinafter called contactor) is suitable for the circuit of AC 50Hz/60Hz with rated voltage up to 690V. It is mainly used to add low voltage reactive power compensation equipment or cut off low voltage parallel capacitor. The contactor is equipped with a device to suppress the inrush current, which can effectively reduce the impact of the making inrush current on the capacitor and suppress the over-voltage when the capacitor is cut off.

Standard: IEC/EN 60947-4-1.

### Type designation



### Operation conditions

- Ambient temperature: -5°C~+40°C, the average during 24 hours should not exceed +35°C;
- Altitude: ≤2000m;
- Atmosphere conditions: At mounting site, relative humidity not exceed 50% at the max temperature of +40°C, higher relative humidity is allowable under lower temperature. For example, RH could be 90% at +20°C, special measures should be taken to occurrence of condensation;
- Pollution degree: 3
- Installation category: III
- Installation conditions: the inclination between installation plane and vertical plane is within ±5°
- Impact and shake: the products should locate in the places where there are no obvious impact and shake.

## CJ19i(CJ19s) Contactor

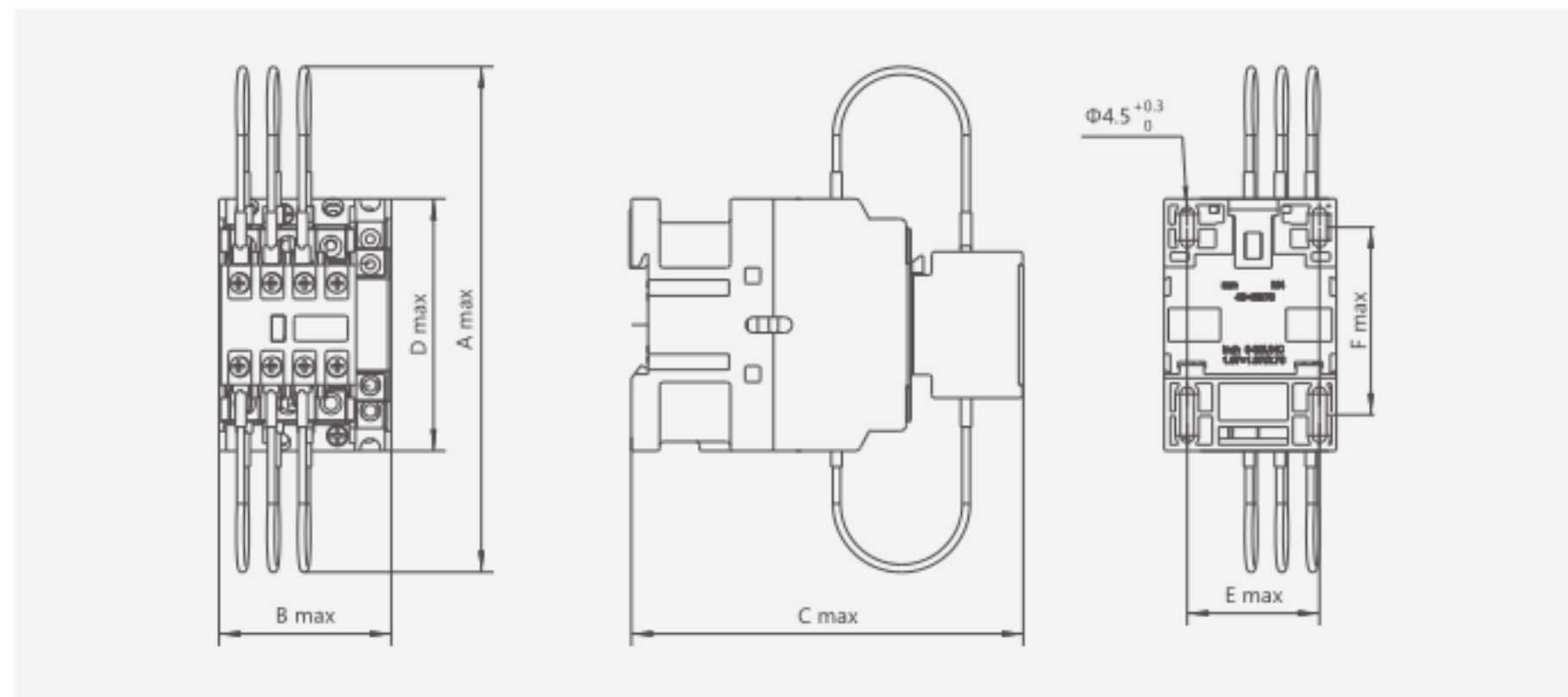
### Technical data

Contactor model		CJ19i-25 CJ19s-25	CJ19i-32 CJ19s-32	CJ19i-43 CJ19s-43	CJ19i-63 CJ19s-63	CJ19i-95 CJ19s-95	CJ19i-115 CJ19s-115	
Main circuit features								
Rated operational voltage(Ue)	V	380/400						
Rated isolation voltage(Ui)	V	690						
Rated current of controllable capacitor(I <sub>n</sub> )	AC-6b 400V	A	17	29	36	43	72	87
	AC-6b 230V	kVar	6	9	10	15	22.5	35
Rated capacity of controllable capacitor(Q <sub>n</sub> )	AC-6b 400V	kVar	12	18	20	30	45	60
Rated conventional heating current(I <sub>th</sub> )	A	25	32	43	63	95	115	
Restrained surge capacity	A	≤35I <sub>n</sub>			≤55I <sub>n</sub>			
Mechanical durability	10 <sup>4</sup> times	100						
Electrical durability	AC-6b 400V 10 <sup>4</sup> times	15				12		
Operating frequency cycles/h	AC-6b 400V times/h	300				120		
Coil features								
Controlled power voltage (Us)	AC50Hz V	110, 220, 380						
Operation voltage range	operation voltage	V	85%~110%Us when install inclination angle is +22.5°; 70%~120%Us when install inclination angle is ±5°;					
	release voltage	V	20%~75%Us when install inclination angle is +22.5°; 20%~65%Us when install inclination angle is ±5°;					
Auxiliary contact features								
Number of auxiliary contact		12, 21						
Rated conventional heating current(I <sub>th</sub> )	A	10						
The minimum load can be connected to		6V×10mA						

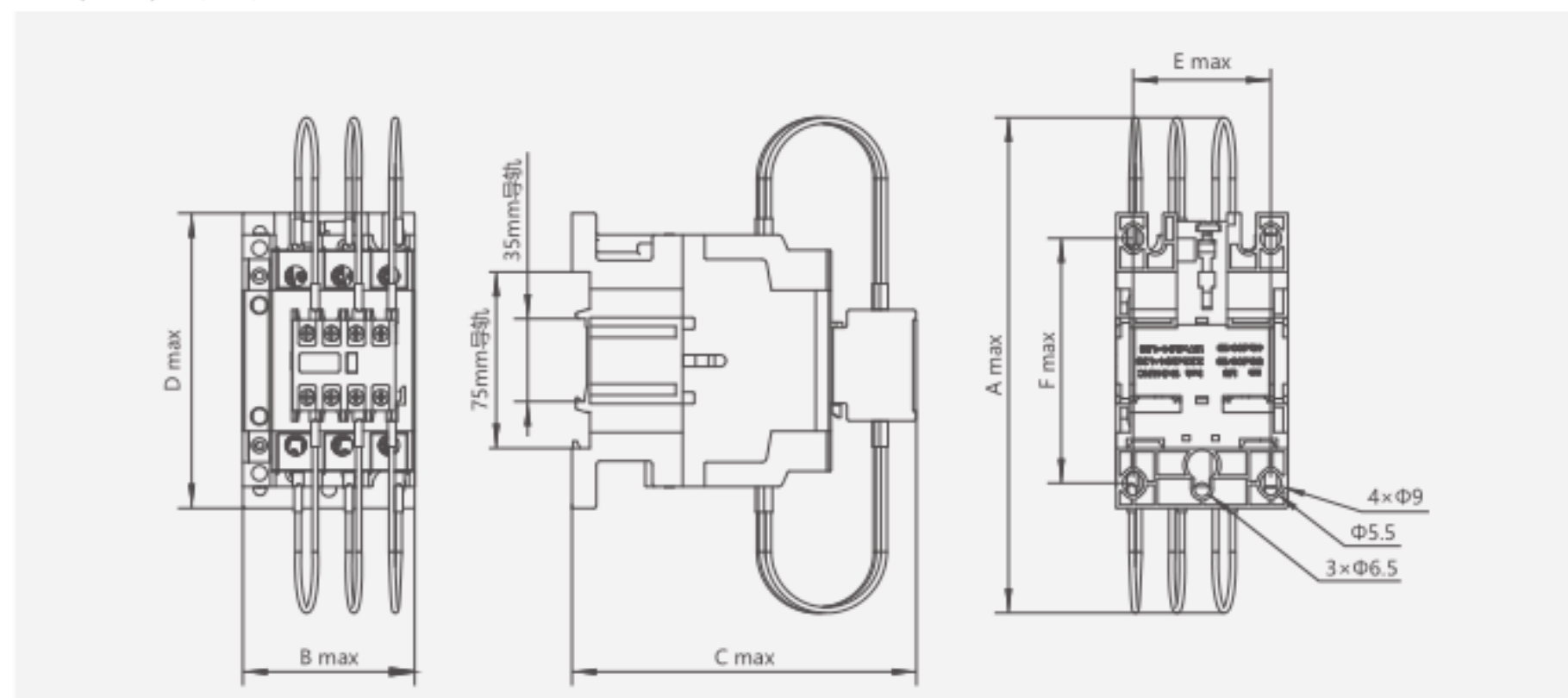
## CJ19i(CJ19s) Contactor

### Overall and mounting dimensions

CJ19i(CJ19s)-25, 32, 43



CJ19i(CJ19s)-25, 32, 43



Model	overall dimensions				mounting dimensions	
	Amax	Bmax	Cmax	Dmax	Emax	Fmax
CJ19i(CJ19s)-25	176	45.5	122	74.5	35	50/60
CJ19i(CJ19s)-32	180	56.5	132	83	40	50/60
CJ19i(CJ19s)-43	180	56.5	132	83	40	50/60
CJ19i(CJ19s)-63	190	74.5	154	127.5	59	100/110
CJ19i(CJ19s)-95	190	85.5	160	127.5	67	100/110
CJ19i(CJ19s)-115	190	85.5	160	127.5	67	100/110

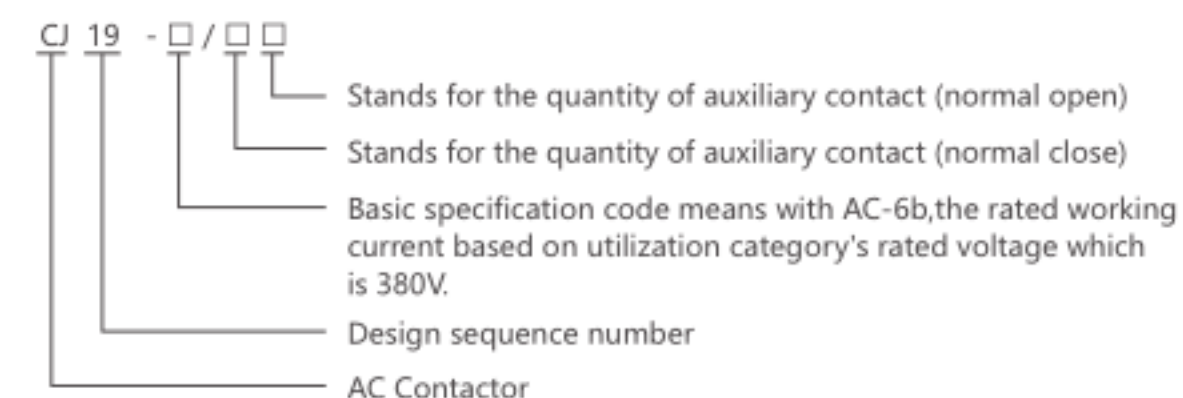
## CJ19 Changeover Capacitor AC Contactor



### General

CJ19 series AC Contactor is suitable for using in the circuits the rated voltage up to 400V AC 50Hz or 60Hz. CJ19 is used to combine with low voltage reactive power compensators or cut off low voltage shunt capacitor. CJ19 series AC Contactor has restraining device to effectively decrease impact caused by inrush transient current when switch on or over voltage when switch off.

### Type designation



Note:

Acquiesce in 3 pairs of N/O main auxiliary contacts and 3 pairs of N/O precharge auxiliary contacts

### Technical data

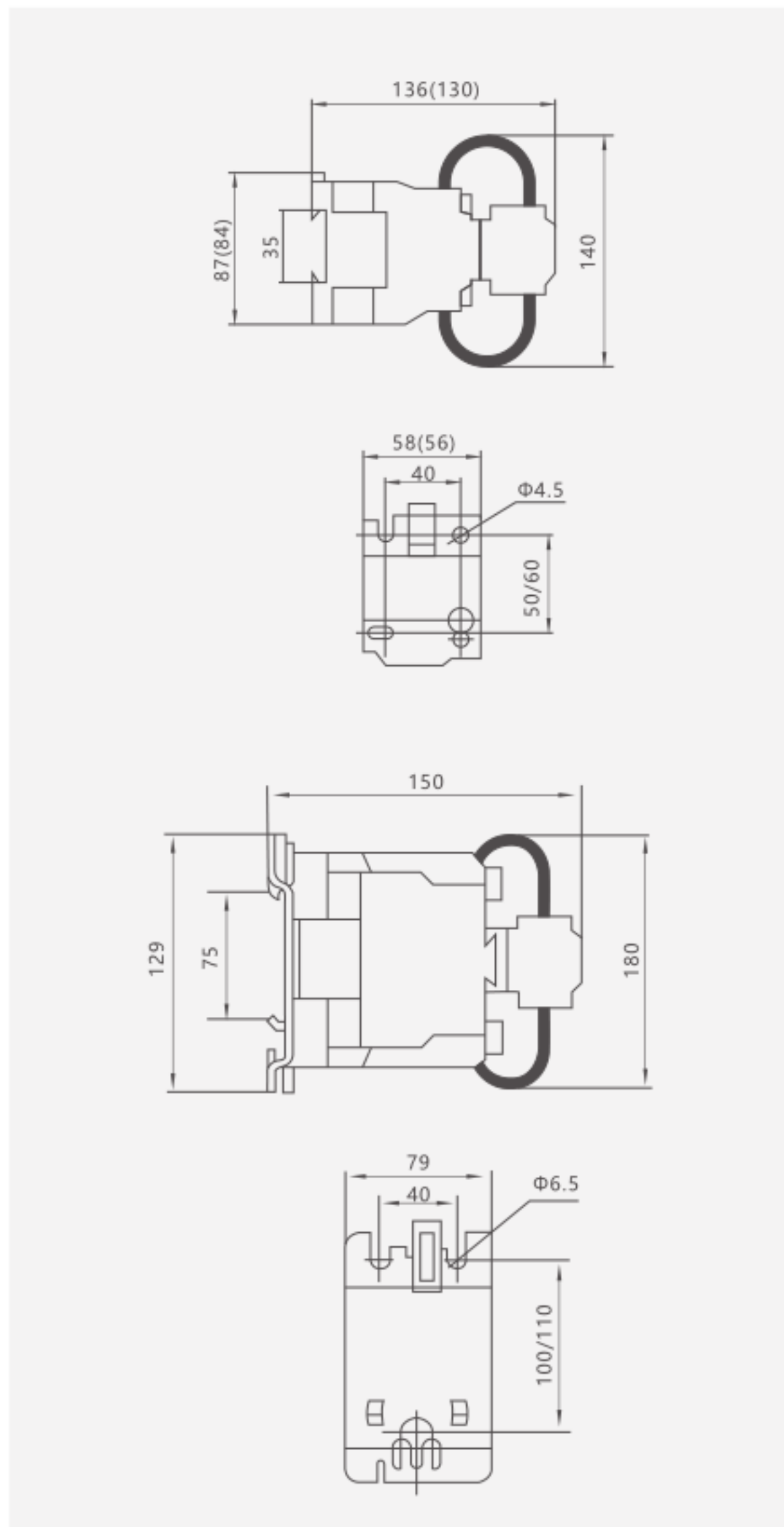
Item	Type	CJ19-25						CJ19-32						CJ19-43						CJ19-63						CJ19-95						CJ19-115					
		6		9		10		15		22.5		35																									
Controllable capacitor capacity (kvar)	230V	6		9		10		15		22.5		35																									
	400V	12		18		20		30		45		60																									
Rated insulation voltage (V)		500																																			
Rated operation voltage (V)		380																																			
Conventional thermal current (A)		25		32		43		63		95		115																									
AC-6b rated working current (A)		17		23		29		43		72		87																									
Restrained surge capacity/ Capacitor rated current		20le																																			
Controlled power voltage (V)		48, 110, 127, 220, 380																																			
Conventional thermal current of auxiliary contacts (A)		6						10																													
Operating frequency (cycles/h)		120																																			
Electrical life ( $\times 10^5$ time)		1																																			
Mechanical life ( $\times 10^5$ time)		10																																			



## CJ19 Changeover Capacitor AC Contactor



### Outline and installation dimensions



## CJX2-Z DC Contactors



CJX2-09~32Z



CJX2-40~95Z

### Application

CJX2-Z series DC operated contactor is suitable for use in the circuits up to rated voltage 660V DC 50Hz or 60Hz, and in rated current 9-95A in DC-3/380V load circuits. For remote controlling circuit making, breaking and frequent starting DC motors. It can also combine with the auxiliary contact group, air delayer, thermal relay devices etc.

### Specifications

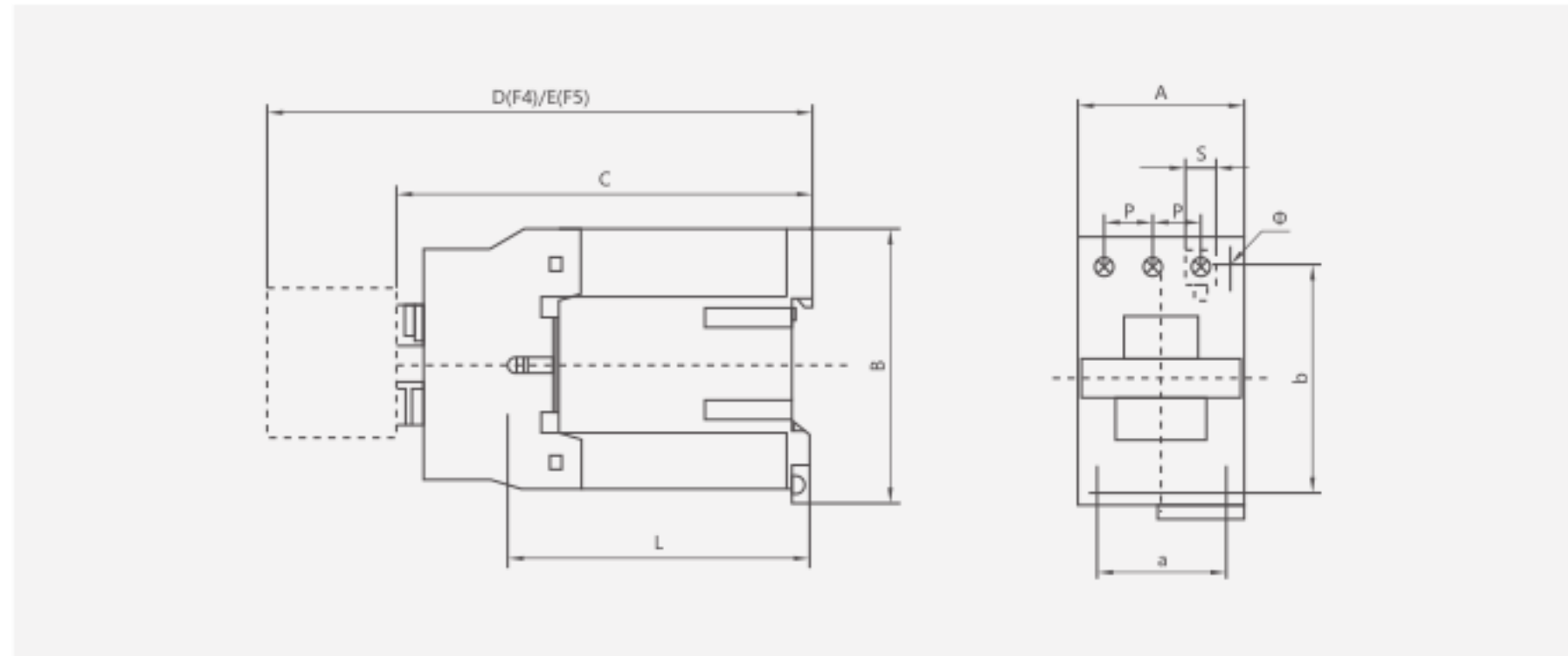
Type		CJX2-09Z	CJX2-12Z	CJX2-18Z	CJX2-25Z	CJX2-32Z	
Rated working current(A)	380V	AC3	9	12	18	25	32
		AC4	3.5	5	7.7	8.5	12
	660V	AC3	6.6	8.9	12	18	21
		AC4	1.5	2	3.8	4.4	7.5
Rated heat current(A)		25	25	32	40	50	
220/240V		2.2	3	4	5.5	7.5	
Controllable power (kW)	380/400V		4	5.5	7.5	11	15
	415V		4	5.5	9	11	15
	500V		5.5	7.5	10	15	18.5
	600/690V		5.58	7.5	10	15	18.5
Pole		3,4	3,4	3	3,4	3	
Rated working voltage(V)		380,660	380,660	380,660	380,660	380,660	
Rated insulation voltage(V)		660	660	660	660	660	
Mechanical life $\times 10^4$		1000	1000	1000	1000	1000	
Electrical life	AC $\times 10^4$	100	100	100	100	100	
	AC4 $\times 10^4$	20	20	20	20	20	
Operating frequency	Electrical life AC $\times 10^4$	1200	1200	1200	1200	1200	
	AC4 $\times 10^4$	300	300	300	300	300	
	Mechanical life $\times 10^4$	3600	3600	3600	3600	3600	
Rated controlled voltage(V)		24-660	24-660	24-660	24-660	24-660	
Working voltage	Close DC%	0.85~1.1Us	0.85~1.1Us	0.85~1.1Us	0.85~1.1Us	0.85~1.1Us	
	Open DC%	0.10~0.75Us	0.10~0.75Us	0.10~0.75Us	0.10~0.75Us	0.10~0.75Us	

Type		CJX2-40Z	CJX2-50Z	CJX2-65Z	CJX2-80Z	CJX2-95Z	
Rated working current(A)	380V	AC3	40	50	65	80	95
		AC4	18.5	24	28	37	44
	660V	AC3	34	39	42	49	55
		AC4	9	12	14	17.3	21.3
Rated heat current(A)		60	80	80	125	125	
220/240V		11	15	18.5	22	25	
Controllable power (kW)	380/400V		18.5	22	30	37	45
	415V		22	30	37	45	45
	500V		22	30	37	55	55
	600/690V		30	33	37	45	55
Pole		3,4	3,4	3,4	3,4	3,4	
Rated working voltage(V)		380,660	380,660	380,660	380,660	380,660	
Rated insulation voltage(V)		660	660	660	660	660	
Mechanical life $\times 10^4$		800	800	800	800	800	
Electrical life	AC $\times 10^4$	80	80	80	80	80	
	AC4 $\times 10^4$	15	15	15	15	15	
Operating frequency	Electrical life AC $\times 10^4$	600	600	600	600	600	
	AC4 $\times 10^4$	300	300	300	300	300	
	Mechanical life $\times 10^4$	3600	3600	3600	3600	3600	
Rated controlled voltage(V)		24-660	24-660	24-660	24-660	24-660	
Working voltage	Close DC%	0.85~1.1Us	0.85~1.1Us	0.85~1.1Us	0.85~1.1Us	0.85~1.1Us	
	Open DC%	0.10~0.75Us	0.10~0.75Us	0.10~0.75Us	0.10~0.75Us	0.10~0.75Us	

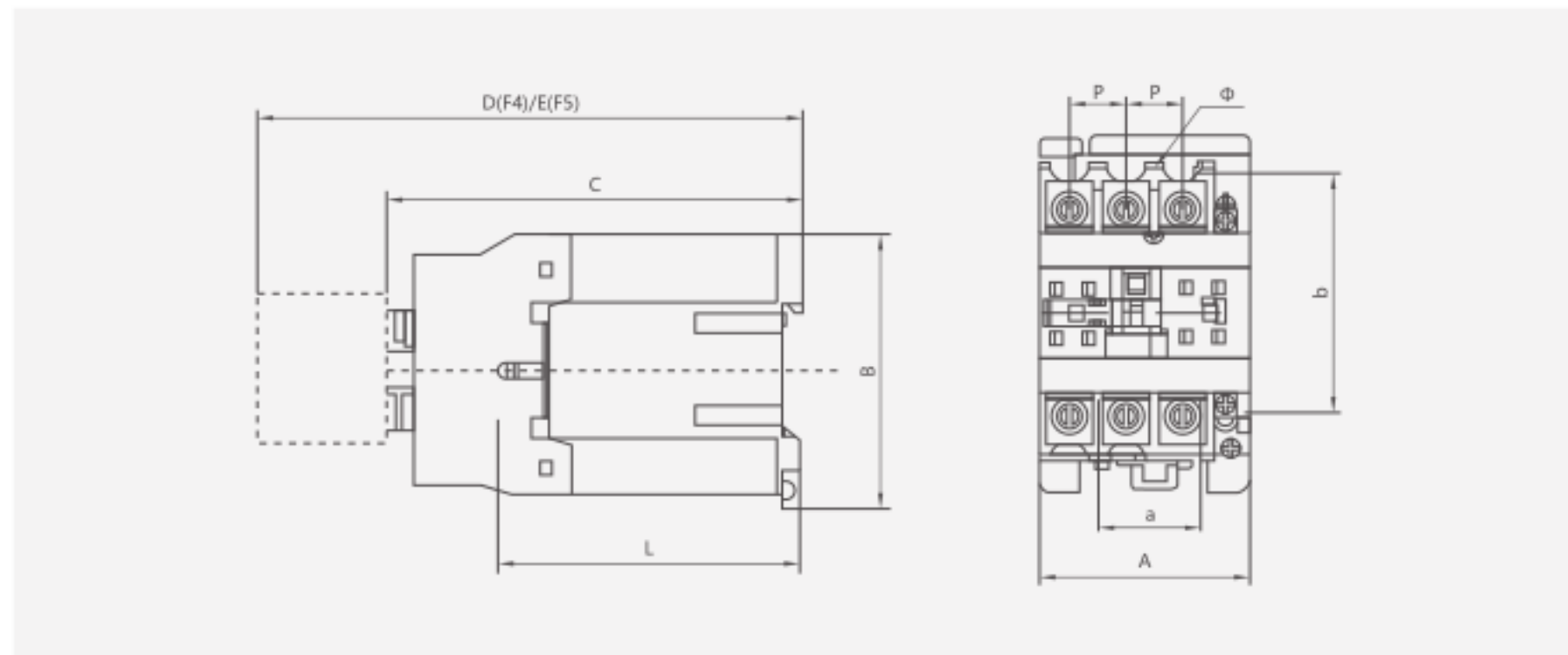
## CJX2-Z DC Contactors

### Outline and Mounting Dimension

CJX2-09~32Z



CJX2-40~95Z



Type	Amax	Bmax	Cmax	Dmax	Emax	a	b	Φ	L	P	S
CJX2-09Z~12Z	47	76	82(116)	120.5(154.5)	140.5(174.5)	34/35	50/60	4.5	60(95)	105	8.6
CJX2-18Z	47	76	87(122)	125.5(160.5)	145.5(180.5)	34/35	50/60	4.5	61(96)	11.3	10.4
CJX2-25Z	57	86	95(131)	133.5(169.5)	153.5(189.5)	40	48	4.5	70(107)	13.2	11.7
CJX2-32Z	57	86	100(138)	138.5(176.5)	158.5(196.5)	40	48	4.5	71.6(120)	14.5	13
CJX2-4011Z~6511Z	77	129	116(173)	154.5(211.5)	174.5(231.5)	40	100/10	6.5	78(135)	20	8.6
CJX2-4004/4008Z ~6504/6508Z	84	129	116(173)	154.5(211.5)	174.5(231.5)	40	100/10	6.5	78(135)	20	8.6
CJX2-8011Z~9511Z	87	129	127(188)	165.5(226.5)	165.5(226.5)	40	100/10	6.5	83(140)	23.5	12
CJX2-8004/8008Z ~9504/9508Z	96	129	127(183)	160.5(221.5)	180.5(241.5)	40	100/10	6.5	83(140)	23.5	12

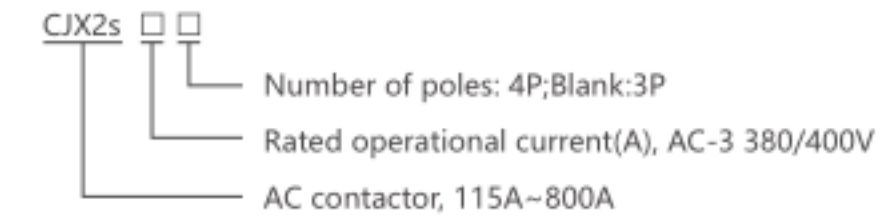
## CJX2s-F AC Contactor



### General

CJX2s series AC contactor is applied to circuits with AC 50Hz/60Hz, rated voltage up to 690V, rated current up to 800A. It is used for remote making & breaking circuits, and protect circuit from overload when assembling with thermal over-load relay. Standard: IEC 60947-4-1.

### Type designation



### Operating conditions

1. Ambient temperature: -5°C~+40°C;
2. Air conditions: At mounting site, relative humidity not exceed 50% at the maximum temperature of +40°C. For the wettest month, the maximum relative humidity averaged shall be 90% while the lowest temperature averaged in that month is +20°C, special measures should be taken to occurrence of condensation.
3. Altitude: ≤2000m;
4. Pollution grade: 2
5. Mounting category: III;
6. Mounting conditions: inclination between the mounting plane and the vertical plane not exceed ±5°;
7. The product should locate in the places where there are no obvious impact and shake.

### Technical data

Table 1

Model	Rated conventional heating current(A) Ith AC-1	Rated operational current(A)		Power of controlled 3-phase cage motor(kW)		Operating cycles (times/h) AC-3	Electrical life (×10 <sup>4</sup> times) AC-3	Mechanical life (×10 <sup>4</sup> times)	Matched fuse	
		AC-3 380/400V	AC-4 660/690V	AC-3 380/400V	AC-4 660/690V				Model	Rated current A
CJX2s-115	200	115	86	55	80	1200	120	1000	NT1	250
CJX2s-150	200	150	108	75	100				NT1	250
CJX2s-185	275	185	118	90	110	600	100	600	NT2	315
CJX2s-225	275	225	137	110	132				NT2	315
CJX2s-265	315	265	170	132	160				NT3	355
CJX2s-330	380	330	235	160	200				NT3	500
CJX2s-400	450	400	303	200	250				NT3	630
CJX2s-500	630	500	353	250	335				NT4	800
CJX2s-630	800	630	462	335	450	60	300	NT4	1000	
CJX2s-800	800	800(AC-3)	486(AC-3)	450	475			NT4	1000	
CJX2s-800	800	630(AC-4)	462(AC-4)	335	450			NT4	1000	



## CJX2s-F AC Contactor

### Type designation

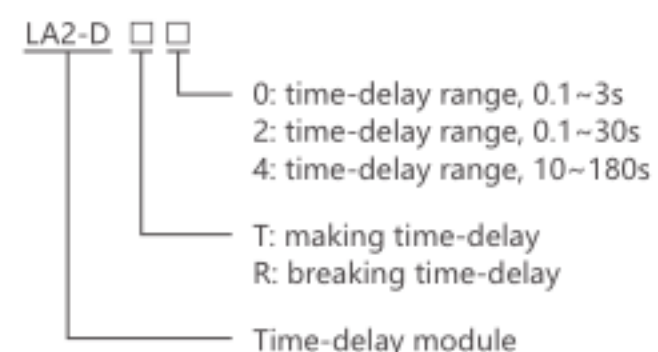
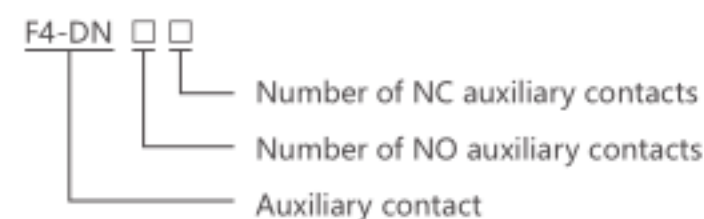


Table 2 Auxiliary contact

Type	Product	Configuration of contacts	
		Number of N/O contact	Number of N/C contact
F4-DN20 F4-DN11 F4-DN02		2 1 0	0 1 2
F4-DN40 F4-DN31 F4-DN22 F4-DN13 F4-DN04		4 3 2 1 0	0 1 2 3 4

Table 3 Time-delay module

Type	Product	Time-delay range	Number of time-delay contacts
LA2-DT0 LA2-DT2 LA2-DT4		0.1s~3s 0.1s~30s 10s~180s	NO+NC NO+NC NO+NC
LA3-DR0 LA3-DR2 LA3-DR4		0.1s~3s 0.1s~30s 10s~180s	NO+NC NO+NC NO+NC

## CJX2s-F AC Contactor

Table 4 Coil

Contactor type	Coil code	Coil voltage(V)			
		110V AC	127V AC	220V AC	380V AC
 Common products	CJX2s 115,150	FF 110	FF 127	FF 220	FF 380
	CJX2s 185,225	FG 110	FG 127	FG 220	FG 380
	CJX2s 265	FH 110	FH 127	FH 220	FH 380
 Electricity-saving products	CJX2s 330	FH 1102	FH 1272	FH 2202	FH 3802
	CJX2s 400	FJ 110	FJ 127	FJ 220	FJ 380
	CJX2s 500	FK 110	FK 127	FK 220	FK 380
	CJX2s 630	FL 110	FL 127	FL 220	FL 380
	CJX2s 800	FM 110	FM 127	FM 220	FM 380

Note: operation voltage: (85%~110%)Us; drop-out voltage: (20%~75%)Us for common products, (10%~75%)Us for common products.

### Terminal connection

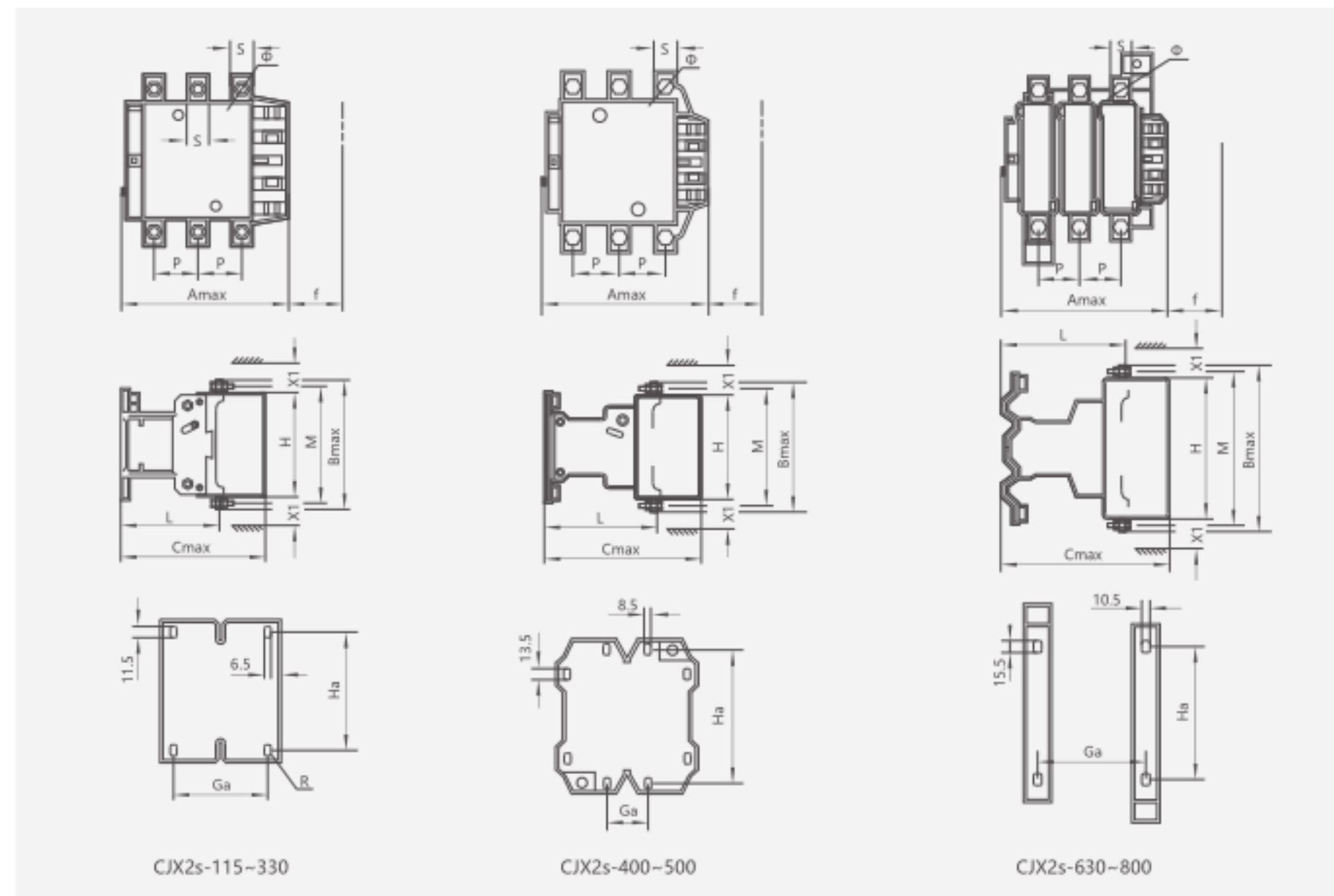
Model	The connection capability			Screw size	Tightening torque (N·m)
	Number of piece	Cable cross section (mm <sup>2</sup> )	Cu busbar cross section (mm <sup>2</sup> )		
CJX2s-115	1	70~95	-	M6	3
CJX2s-150	1	70~95	-	M8	6
CJX2s-185	1	95~150	-	M8	6
CJX2s-225	1	95~150	-	M10	10
CJX2s-265	1	120~185	-	M10	10
CJX2s-330	1	185~240	-	M10	10
CJX2s-400	1(2)	240(150)	30×5	M10	10
CJX2s-500	2	150~185	40×5	M10	10
CJX2s-630	2	185~240	50×5	M12	14
CJX2s-800	2	185~240	50×5	M12	14

### Structure features

1. The contactor is composed of arc-extinguishing system, contact system, base frame and magnetic system (including iron core, coil).
2. The contact system of the contactor is of direct action type and double-breaking points allocation.
3. The lower base-frame of the contactor is made of shaped aluminum alloy and the coil is of plastic enclosed structure.
4. The coil is assembled with the amature to be an integrated one. They can be directly taken out from or inserted into the contactor.
5. It is convenient for user's service and maintenance.

### CJX2s-F AC Contactor

#### Overall and mounting dimensions (mm)



Model	CJX2s-115		CJX2s-150		CJX2s-185		CJX2s-225		CJX2s-265		CJX2s-330		CJX2s-400		CJX2s-500		CJX2s-630		CJX2s-800		
	3P	4P	3P	4P	3P	4P	3P	4P	3P	4P	3P	4P	3P	4P	3P	4P	3P	4P	3P	4P	
A	168	204	168	204	171	211	171	211	202	247	215	261	215	261	235	312	389	312			
B	163	163	171	171	175	175	198	198	204	204	208	208	208	208	238	305	305	305			
C	172	172	172	172	183	183	183	183	215	215	220	220	220	220	233	256	256	256			
P	37	37	40	40	40	40	48	48	48	48	48	48	48	48	55	80	80	80			
S	20	20	20	20	20	20	25	25	25	25	25	25	25	25	30	40	40	40			
Φ	M6	M6	M8	M8	M8	M8	M10	M10	M10	M10	M10	M10	M10	M10	M10	M12	M12	M12			
f	131	131	131	131	131	131	131	131	147	147	147	147	146	146	150	181	181	181			
M	147	147	150	150	154	154	172	172	178	178	181	181	181	181	208	264	264	264			
H	124	124	124	124	127	127	127	127	147	147	158	158	158	158	172	202	202	202			
L	107	107	107	107	113.5	113.5	113.5	113.5	141	141	145	145	145	145	146	155	155	155			
X1 200~500V	10	10	10	10	10	10	10	10	10	10	15	15	15	15	15	20	20	20			
X1 660~1000V	15	15	15	15	15	15	15	15	15	15	20	20	20	20	20	30	30	30			
Ga	80	80	80	80	80	80	80	80	96	96	96	96	96	96	80	180	240	180			
Ha	110~120	110~120	110~120	110~120	110~120	110~120	110~120	110~120	110~120	110~120	110~120	110~120	110~120	110~120	170~180	170~180	180~190	180~190			

Note: a, f is the min distance needed to mount and dismount the coil.  
 b, X1: arcing distance is identified by operating voltage and breaking capacity.

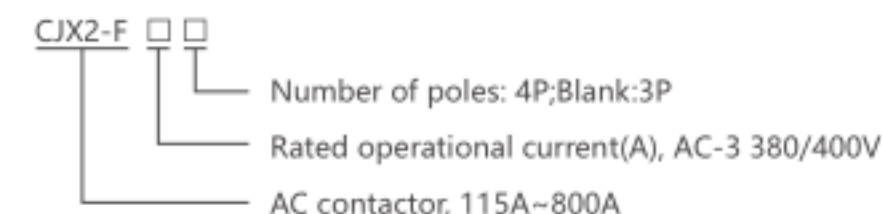
### CJX2-F AC Contactor



#### General

CJX2-F series AC contactor is applied to circuits with AC 50Hz/60Hz, rated voltage up to 690V, rated current up to 800A. It is used for remote making & breaking circuits, and protect circuit from overload when assembling with thermal over-load relay. Standard: IEC 60947-4-1.

#### Type designation



#### Operating conditions

1. Ambient temperature: -5°C~+40°C;
2. Air conditions: At mounting site, relative humidity not exceed 50% at the maximum temperature of +40°C. For the wettest month, the maximum relative humidity averaged shall be 90% while the lowest temperature averaged in that month is +20°C, special measures should be taken to occurrence of condensation.
3. Altitude: ≤2000m;
4. Pollution grade: 2
5. Mounting category: III;
6. Mounting conditions: inclination between the mounting plane and the vertical plane not exceed ±5°;
7. The product should locate in the places where there are no obvious impact and shake.

#### Technical data

Table 1

Model	Rated conventional heating current(A) Ith AC-1	Rated operational current(A)		Power of controlled 3-phase cage motor(kW)		Operating cycles (times/h) AC-3	Electrical life (×10 <sup>4</sup> times) AC-3	Mechanical life (×10 <sup>4</sup> times)	Matched fuse	
		AC-3	AC-4	AC-3	AC-4				Model	Rated current A
		380/400V	660/690V	380/400V	660/690V					
CJX2-F115	200	115	86	55	80	1200	120	1000	NT1	250
CJX2-F150	200	150	108	75	100				NT1	250
CJX2-F185	275	185	118	90	110	600	100	600	NT2	315
CJX2-F225	275	225	137	110	132				NT2	315
CJX2-F265	315	265	170	132	160				NT3	355
CJX2-F330	380	330	235	160	200				NT3	500
CJX2-F400	450	400	303	200	250				NT3	630
CJX2-F500	630	500	353	250	335				NT4	800
CJX2-F630	800	630	462	335	450	60	300	300	NT4	1000
CJX2-F800	800	800(AC-3)	486(AC-3)	450	475				NT4	1000
CJX2-F800	800	630(AC-4)	462(AC-4)	335	450				NT4	1000



## CJX2-F AC Contactor

### Type designation

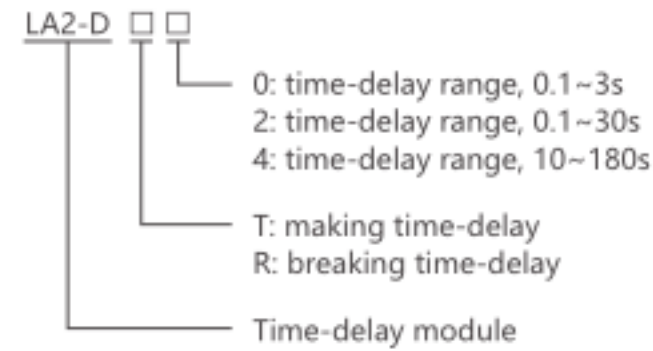
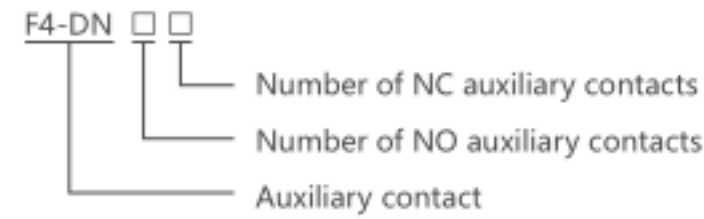


Table 2 Auxiliary contact

Type	Product	Configuration of contacts	
		Number of N/O contact	Number of N/C contact
F4-DN20 F4-DN11 F4-DN02		2 1 0	0 1 2
F4-DN40 F4-DN31 F4-DN22 F4-DN13 F4-DN04		4 3 2 1 0	0 1 2 3 4

Table 3 Time-delay module

Type	Product	Time-delay range	Number of time-delay contacts
LA2-DT0 LA2-DT2 LA2-DT4		0.1s~3s 0.1s~30s 10s~180s	NO+NC NO+NC NO+NC
LA3-DR0 LA3-DR2 LA3-DR4		0.1s~3s 0.1s~30s 10s~180s	NO+NC NO+NC NO+NC

## CJX2-F AC Contactor

Table 4 Coil

Contactor type	Coil code	Coil voltage(V)			
		110V AC	127V AC	220V AC	380V AC
 Common products	CJX2-F115,150	FF 110	FF 127	FF 220	FF 380
	CJX2-F185,225	FG 110	FG 127	FG 220	FG 380
	CJX2-F265	FH 110	FH 127	FH 220	FH 380
 Electricity-saving products	CJX2-F330	FH 1102	FH 1272	FH 2202	FH 3802
	CJX2-F400	FJ 110	FJ 127	FJ 220	FJ 380
	CJX2-F500	FK 110	FK 127	FK 220	FK 380
	CJX2-F630	FL 110	FL 127	FL 220	FL 380
	CJX2-F800	FM 110	FM 127	FM 220	FM 380

Note: operation voltage: (85%~110%)Us; drop-out voltage: (20%~75%)Us for common products, (10%~75%)Us for common products.

### Terminal connection

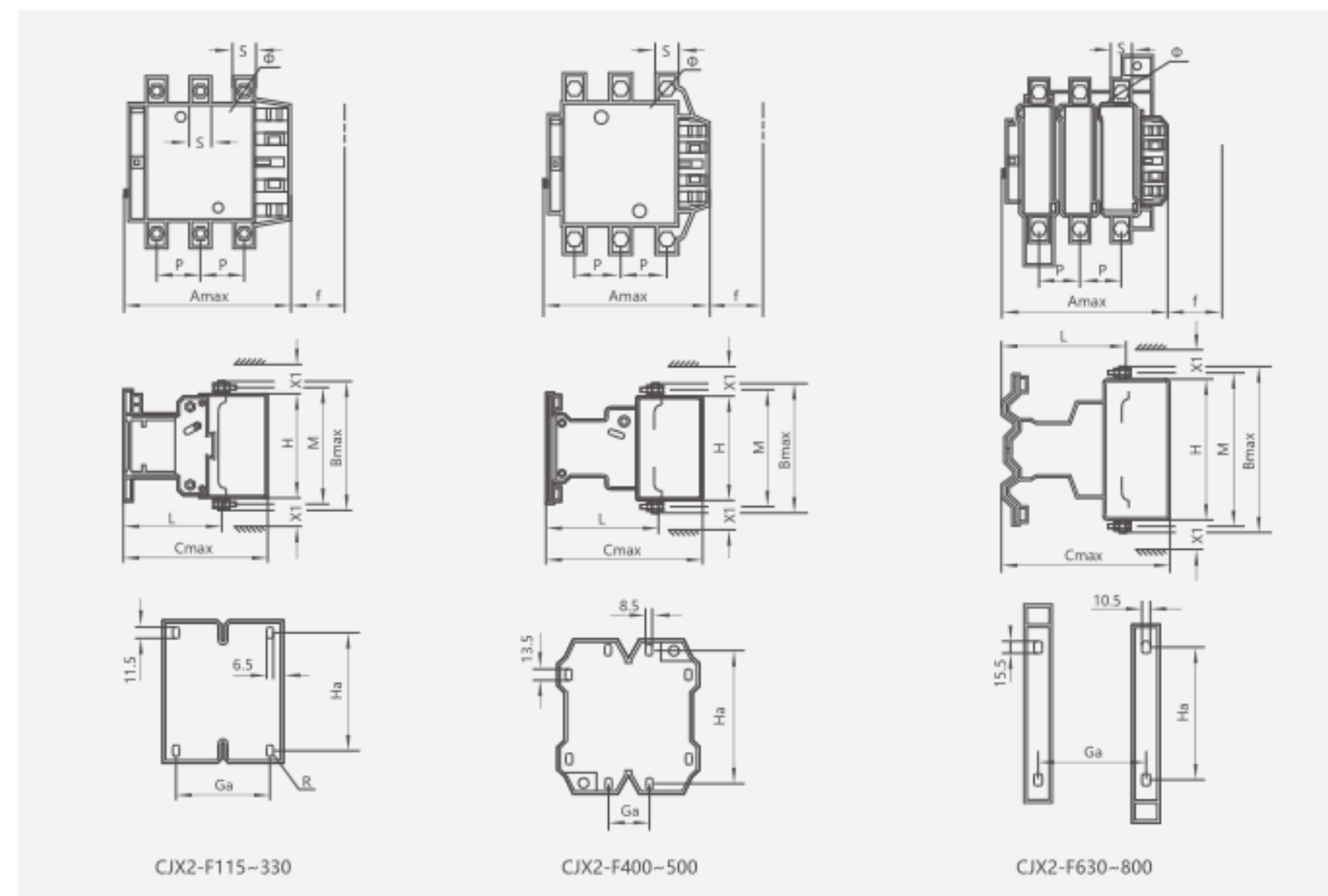
Model	The connection capability			Screw size	Tightening torque (N·m)
	Number of piece	Cable cross section (mm <sup>2</sup> )	Cu busbar cross section (mm <sup>2</sup> )		
CJX2-F115	1	70~95	-	M6	3
CJX2-F150	1	70~95	-	M8	6
CJX2-F185	1	95~150	-	M8	6
CJX2-F225	1	95~150	-	M10	10
CJX2-F265	1	120~185	-	M10	10
CJX2-F330	1	185~240	-	M10	10
CJX2-F400	1(2)	240(150)	30×5	M10	10
CJX2-F500	2	150~185	40×5	M10	10
CJX2-F630	2	185~240	50×5	M12	14
CJX2-F800	2	185~240	50×5	M12	14

### Structure features

1. The contactor is composed of arc-extinguishing system, contact system, base frame and magnetic system (including iron core, coil).
2. The contact system of the contactor is of direct action type and double-breaking points allocation.
3. The lower base-frame of the contactor is made of shaped aluminum alloy and the coil is of plastic enclosed structure.
4. The coil is assembled with the amature to be an integrated one. They can be directly taken out from or inserted into the contactor.
5. It is convenient for user's service and maintenance.

### CJX2-F AC Contactor

Overall and mounting dimensions (mm)



Model	CJX2-F115		CJX2-F150		CJX2-F185		CJX2-F225		CJX2-F265		CJX2-F330		CJX2-F400		CJX2-F500		CJX2-F630		CJX2-F800
	3P	4P	3P	4P	3P	4P	3P	4P	3P	4P	3P	4P	3P	4P	3P	3P	4P	3P	
A	168	204	168	204	171	211	171	211	202	247	215	261	215	261	235	312	389	312	312
B	163	163	171	171	175	175	198	198	204	204	208	208	208	208	238	305	305	305	305
C	172	172	172	172	183	183	183	183	215	215	220	220	220	220	233	256	256	256	256
P	37	37	40	40	40	40	48	48	48	48	48	48	48	48	55	80	80	80	80
S	20	20	20	20	20	20	25	25	25	25	25	25	25	25	30	40	40	40	40
Φ	M6	M6	M8	M8	M8	M8	M10	M10	M10	M10	M10	M10	M10	M10	M10	M12	M12	M12	M12
f	131	131	131	131	131	131	131	131	147	147	147	147	146	146	150	181	181	181	181
M	147	147	150	150	154	154	172	172	178	178	181	181	181	181	208	264	264	264	264
H	124	124	124	124	127	127	127	127	147	147	158	158	158	158	172	202	202	202	202
L	107	107	107	107	113.5	113.5	113.5	113.5	141	141	145	145	145	145	146	155	155	155	155
X1 200~500V	10	10	10	10	10	10	10	10	10	10	15	15	15	15	20	20	20	20	20
X1 660~1000V	15	15	15	15	15	15	15	15	15	15	20	20	20	20	30	30	30	30	30
Ga	80	80	80	80	80	80	96	96	96	96	80	80	80	80	180	240	180	180	180
Ha	110~120	110~120	110~120	110~120	110~120	110~120	110~120	110~120	110~120	110~120	170~180	170~180	170~180	170~180	180~190	180~190	180~190	180~190	180~190

Note: a, f is the min distance needed to mount and dismount the coil.  
b, X1: arcing distance is identified by operating voltage and breaking capacity.

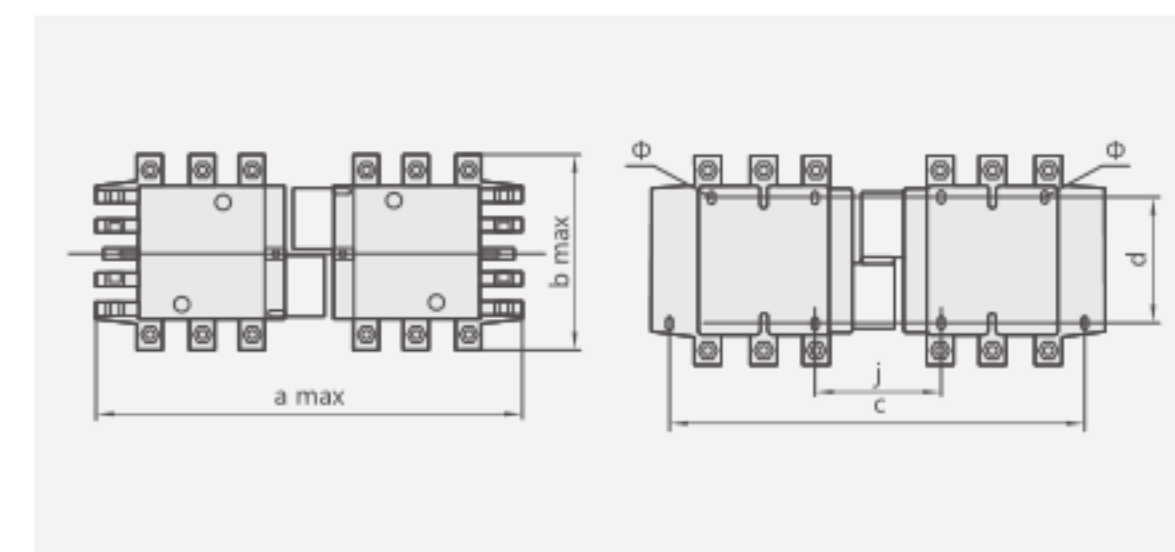
### CJX2-F-N Mechanical Interlocking Contactor



Specifications

Type	Rated operation current(Ie)(A)	Rated thermal current(Ith)(A)	Rated operational power in category AC-3 (kW)		Rated insulation voltage(Ui)(V)
			380V	660V	
CJX2-F115N	115	200	55	80	1000
CJX2-F150N	150	200	75	100	1000
CJX2-F185N	185	275	90	110	1000
CJX2-F225N	225	275	110	129	1000
CJX2-F265N	265	315	132	160	1000
CJX2-F330N	330	380	160	220	1000
CJX2-F400N	400	450	200	280	1000
CJX2-F500N	500	630	250	335	1000
CJX2-F630N	630	800	335	450	1000

Outline and installation dimensions



Type	Pole	a max	b max	c	d	j
CJX2-F115N	3P	350	163	330	110~120	71
	4P	425	208	370		108
CJX2-F150N	3P	350	171	330		71
	4P	425	211	370		111
CJX2-F185N	3P	350	174	330		78
	4P	430	223	370		118
CJX2-F225N	3P	350	197	330		78
	4P	430	243	370		118
CJX2-F265N	3P	450	203	428		109
	4P	546	249	485		157
CJX2-F330N	3P	450	206	428		124
	4P	546	251	485		172
CJX2-F400N	3P	485	206	460	157	
	4P	595	251	485	170~180	
CJX2-F500N	3P	485	238	460	156	
CJX2-F630N	3P	650	304	625	180~190	139
	4P	810	364	785		139
CJX2-F800N	3P	650	304	625	139	



## YCP5 Motor Starter



### General

YCP5 series AC Motor Starter is suitable for circuits the alternating voltage up to 690V, current up to 80A. The product works to control the overload, phase loss, short circuit protection and infrequent starts of a three-phase squirrel cage asynchronous motor. The Motor Starter can protect the distributing line for infrequent load transfer, and it can also works as an isolator.

### Operation and installation condition

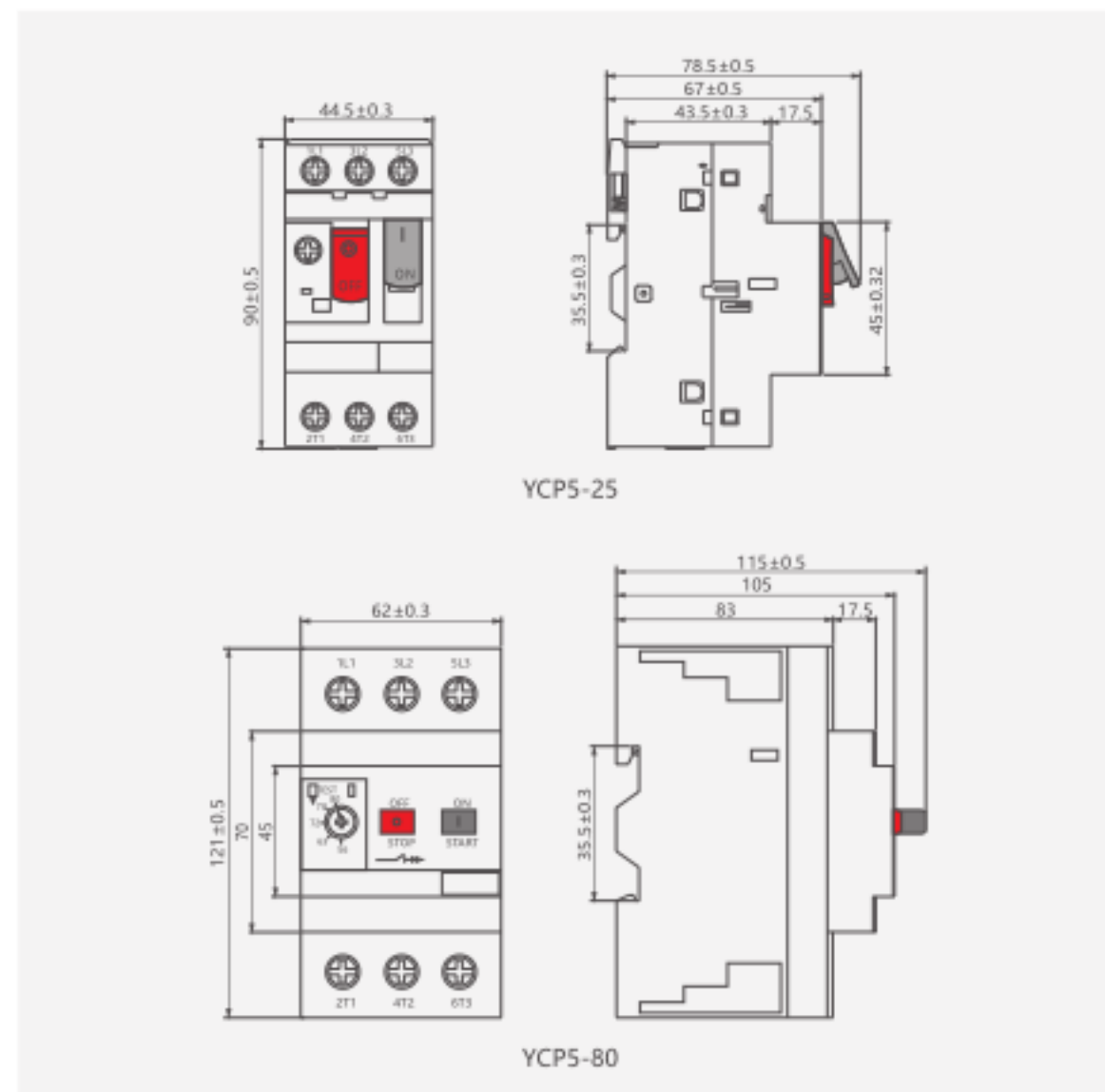
1. Installation altitude  $\leq 2000\text{m}$
2. Ambient air temperature  $-5^{\circ}\text{C} \sim +40^{\circ}\text{C}$  average temperature of 24 hours must below  $+35^{\circ}\text{C}$
3. Relative humidity below 90% when the temperature is  $+25^{\circ}\text{C} \pm 5^{\circ}\text{C}$
4. Ambient pollution level: 3
5. Installation category of the starter: III

Acting characteristic of each phase in distribution circuit breaker in the load balanced condition

No.	Multiple of setting current	Acting time	Initial state	Ambient air temperature
1	1.0In	$\leq 2\text{h}$ non-tripping	Cold state	$+40^{\circ}\text{C} \pm 2^{\circ}\text{C}$
2	1.2In	$\leq 2\text{h}$ tripping	Start after 1	$+40^{\circ}\text{C} \pm 2^{\circ}\text{C}$



### Outline and installation dimensions



## YCP5 Motor Starter

Table 1

Type	Standard power ratings of 3-phase molors 50/60Hz in category AC-3						Current setting range
	220V kW	380V kW	415V kW	440V kW	500V kW	660V kW	
YCP5-25-ME01	-	-	-	-	-	-	0.1-0.16
YCP5-25-ME02	-	-	-	-	-	-	0.16-0.25
YCP5-25-ME03	-	-	-	-	-	-	0.25-0.4
YCP5-25-ME04	-	-	-	-	-	0.37	0.4-0.63
YCP5-25-ME05	-	-	-	0.37	0.37	0.55	0.63-1
YCP5-25-ME06	-	0.37	-	0.55	0.75	1.1	1-1.6
YCP5-25-ME07	0.37	0.75	0.75	1.1	1.1	1.5	1.6-2.5
YCP5-25-ME08	0.75	1.5	1.5	1.5	2.2	3	2.5-4
YCP5-25-ME10	1.1	2.2	2.2	3	3.7	4	4-6.3
YCP5-25-ME14	2.2	4	4	4	5.5	7.5	6-10
YCP5-25-ME16	3	5.5	5.5	7.5	7.5	9	9-14
YCP5-25-ME20	4	7.5	9	9	9	11	13-18
YCP5-25-ME21	5.5	11	11	11	11	15	17-23
YCP5-25-ME22	5.5	11	11	11	15	18.5	20-25
YCP5-25-ME32	7.5	15	15	15	18.5	26	24-32
YCP5-80-ME10	1.1	2.2	2.2	3	3.7	4	6-10
YCP5-80-ME16	2.2	4	4	4	5.5	7.5	10-16
YCP5-80-ME20	4	7.5	7.5	7.5	10	11	14-20
YCP5-80-ME25	5.5	11	11	11	15	18.5	16-25
YCP5-80-ME40	11	18.5	22	22	25	33	25-40
YCP5-80-ME63	15	30	33	33	40	55	40-63
YCP5-80-ME80	22	40	45	45	55	63	56-80

# YCQ7 Series

## Magnetic Starter



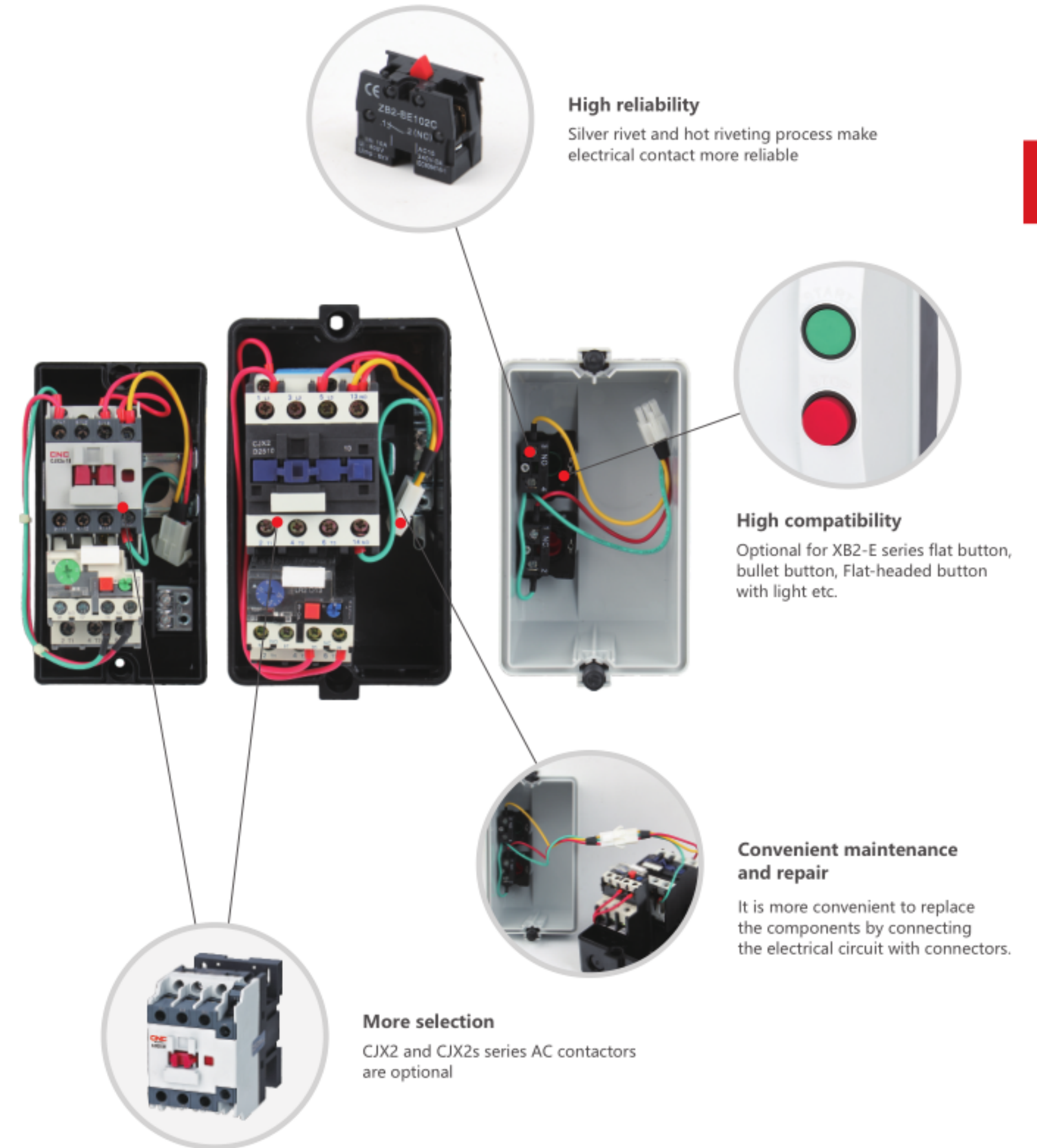
CE IP55

- High compatibility and high reliability
- Convenient maintenance and repair

**CNC**  
ELECTRIC

## YCQ7 Magnetic Starter

Product Structure Analysis Diagram



C



## YCQ7 Magnetic Starter

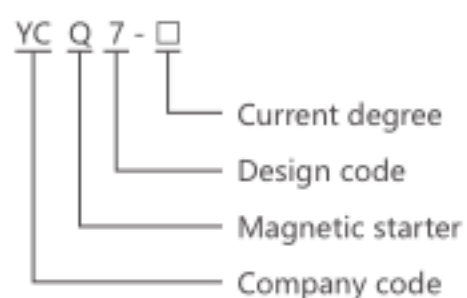


### Scope of application

YCQ7 series magnetic starter is suitable for using in the circuits the rated voltage up to 660V, AC 50Hz or 60Hz, rated control power to 45kW and current to 95A. It is used to control the direct start and stop of the motor, and the starter with thermal overload relay protects the motor from overload and phase failure.

Standard: IEC/EN 60947-4-1.

### Type Designation



### Operation and Installation Condition

- Altitude: ≤2000m
- Ambient air temperature: -5°C~+40°C, average temperature of 24 hours must be below +35°C
- Relative humidity: the maximum temperature of 40 degrees, the air relative humidity not exceed 50%, at a lower temperature can allow for a higher relative humidity. The wettest month's average lowest temperature must be below 25°C, the max relative humidity of that month should not exceed 90%. If humidity changes as a result of occasional gel generated, should eliminate it.
- Installation position: The installation degree of the tilt and vertical plane should not exceed 5°
- In a non-explosive hazardous medium, and there is no place in the medium that is sufficient to corrode metals and destroy insulation gases and conductor dust.
- Where there is rain and snow protection and there is no steam.
- Shock vibration: Products should be installed and used without severe shake, shock and vibration of the place.

### Specifications

- Specifications for magnetic starter (sheet1)
- Coil rated control power supply voltage  $U_s$  can be divided into AC 50Hz or 60Hz: 36V, 110V, 220V, 380V.
- Operating condition: Coil pull-in voltage is (85%~110%)  $U_s$ ; Release voltage is (20%~75%)  $U_s$ .

## YCQ7 Magnetic Starter

Table 1

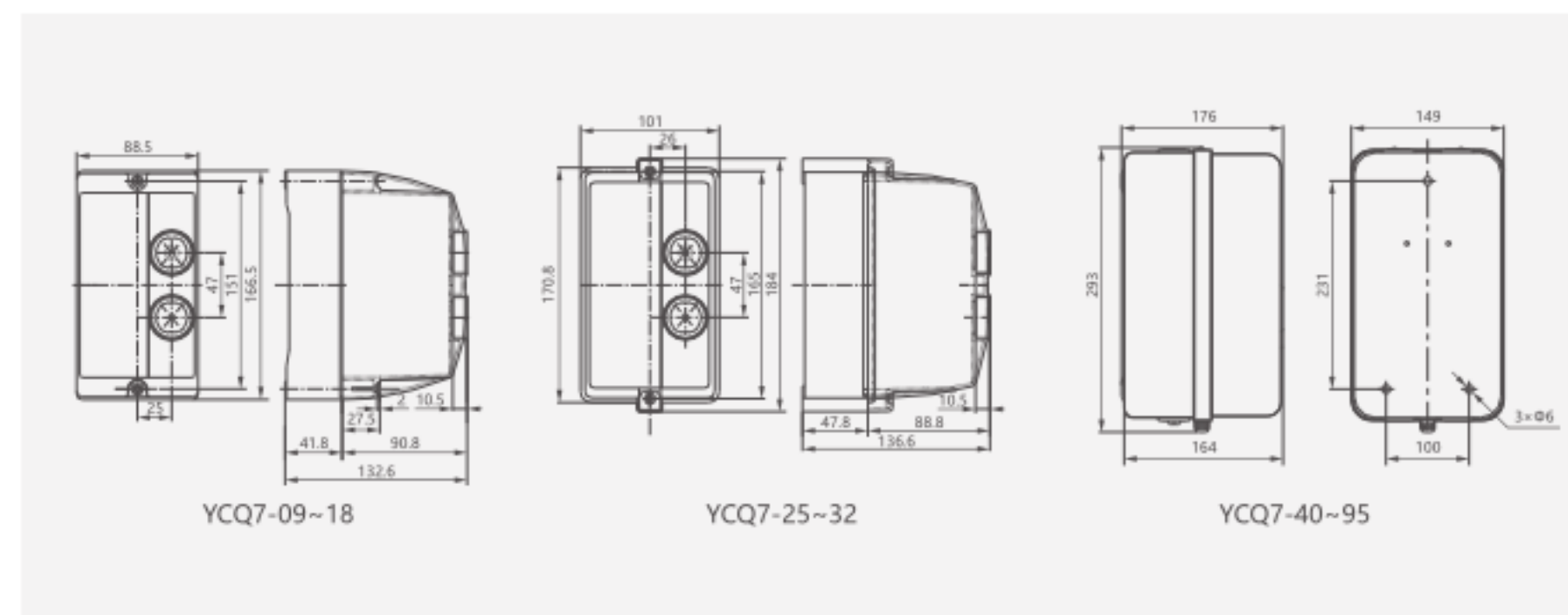
Type	Rated current Ie A	Maximum power duty (kW)			Matched AC contactor type	Matched thermal relay	Setting current range (A)
		AC-3					
		660V	380V	220V			
YCQ7-09	9	5.5	4	2.2	CJX2-D09/CJX2s-09	JR28-25 JR28s-25	2.5~4, 4~6, 5.5~8
YCQ7-12	12	7.5	5.5	3	CJX2-D12/CJX2s-12	JR28-25 JR28s-25	7~10, 9~13
YCQ7-18	18	10	7.5	4	CJX2-D18/CJX2s-18		12~18
YCQ7-25	25	15	11	5.5	CJX2-D25/CJX2s-25		17~25
YCQ7-32	32	18.5	15	7.5	CJX2-D32/CJX2s-32		23~32
YCQ7-40	40	18.5	18.5	11	CJX2-D40/CJX2s-40	JR28-93 JR28s-93	23~32, 30~40
YCQ7-50	50	22	22	15	CJX2-D50/CJX2s-50		37~50, 48~65
YCQ7-65	65	30	30	18.5	CJX2-D65/CJX2s-65		55~70, 63~80
YCQ7-80	80	37	37	22	CJX2-D80/CJX2s-80		80~93
YCQ7-95	95	45	45	25	CJX2-D95/CJX2s-90		

### Structural Features

The starter adopts a protective structure with a protective cover of IP55 and is internally composed of a CJX2 AC contactor and a JR28 thermal overload relay. The entry and exit wiring of the starter adopts the knockout type wiring hole, and the user can selectively knock and connect the four knockout holes according to the wiring requirements. The cover and the base of the starter can be completely separated, and the user is very convenient to install and maintain; the button adopts the XB2 series push button switch assembly to realize the start and stop of the starter, and it will be safe and reliable.

In order to improve the protective performance of the starter, the starter must be installed vertically. The mounting screws should be selected according to the size of the mounting hole. The screws should be no less than M5, and spring washers, flat washers and sealing rubber rings should be added to ensure the fastening of the starter. In addition, the knockout terminal holes should be equipped with corresponding waterproof terminals.

### Overall and Mounting Dimensions



## LE1 Magnetic Starter



### LE1 Magnetic Starter

#### General

LE1 Magnetic starter is suitable for using in the circuits the rated voltage up to 690V AC 50Hz or 60Hz. With AC-3 type, LE1 is used for starting or halting of three-phase squirrel case electromotor which rated working voltage is 380V and rated working current is from 9A to 95A. Combining with matchable thermal relay can protect the motor from overload and phase failure.

#### Operation and installation condition

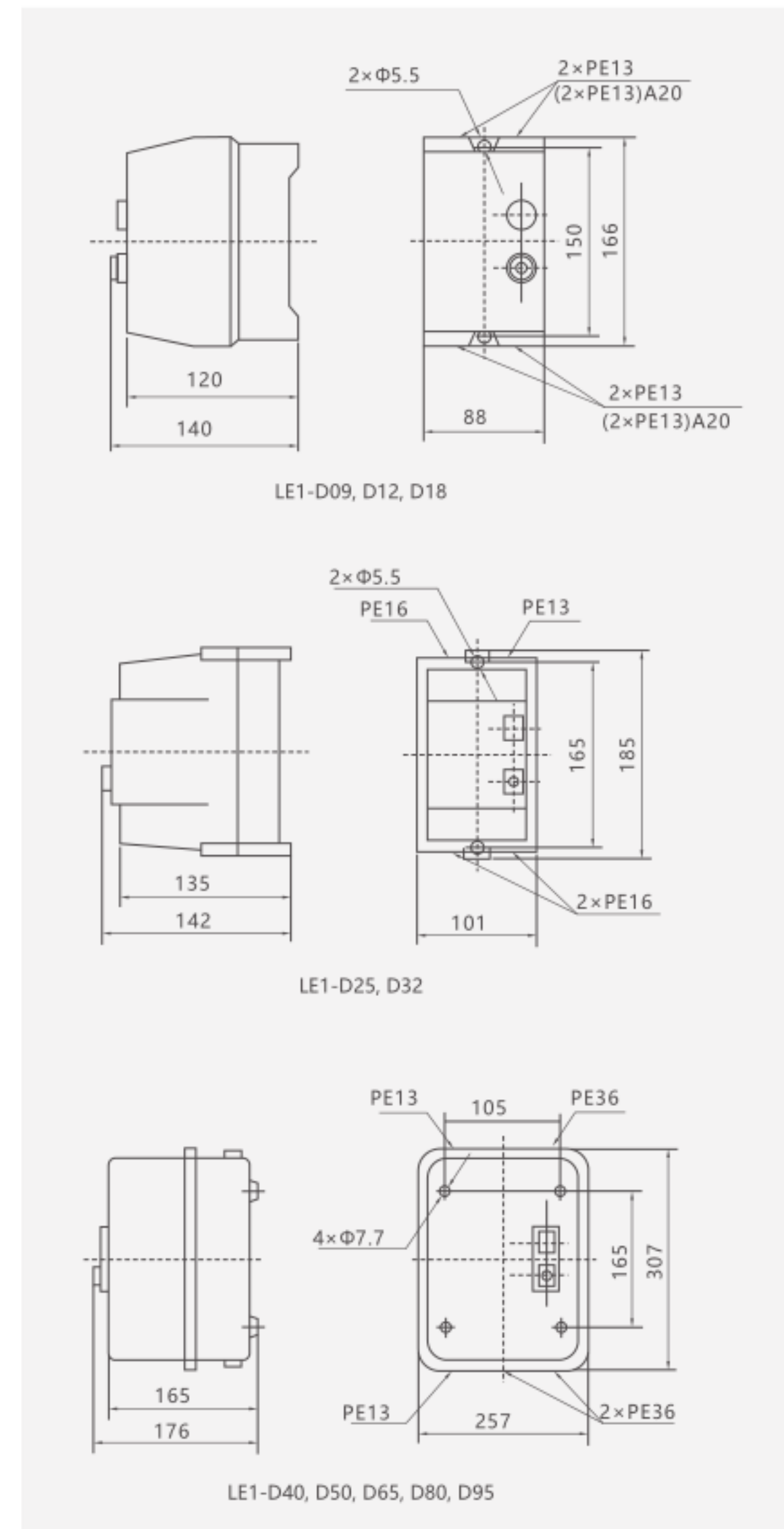
1. Ambient air temperature:  $-5^{\circ}\text{C} \sim +40^{\circ}\text{C}$ . average temperature of 24 hours must be below  $+35^{\circ}\text{C}$
2. Altitude:  $\leq 2000\text{m}$
3. Relative humidity: The maximum temperature of 40 degrees, the air relative humidity not exceed 50%, at a lower temperature can allow for a higher relative humidity. The humidest month's average lowest temperature must be below  $25^{\circ}\text{C}$ , the max relative humidity of that month should not exceed 90%. If humidity changes as a result of occasional gel generated, should eliminate it.
4. Pollution level: 3
5. Installation category: III
6. Installation position: The installation degree of the tilt and vertical plane should not exceed  $\pm 5^{\circ}$ .
7. Shock vibration: Products should be installed and used without severe shake, shock and vibration of the place.

#### Specifications

Type	Maximum power AC3 duty (kW)			Rated current (A)	Matched thermal relay (A)	Setting current range (A)
	220V 230V	380V 400V	660V 690V			
LE1-09	2.2	4	5.5	9	JR28-25 JR28s-25	2.5~4, 4~6, 5.5~8
LE1-12	3	5.5	7.5	12	JR28-25 JR28s-25	7~10, 9~13
LE1-18	4	7.5	10	18		12~18
LE1-25	5.5	11	15	25		17~25
LE1-32	7.5	15	18.5	32		23~32
LE1-40	11	18.5	30	40	JR28-93 JR28s-93	23~32, 30~40 37~50, 48~65 55~70, 63~80 80~93
LE1-50	15	22	33	50		
LE1-65	18.5	30	37	65		
LE1-80	22	37	45	80		
LE1-95	25	45	45	95		

## LE1 Magnetic Starter

### Overall and mounting dimensions(mm)





## JR28s Thermal Relay

### Application


JR28s series thermal overload relay are suitable for overload and phase-failure protection of AC motors with frequency of 50/60Hz, voltage up to 690V, current up to 0.1-630A under 8-hours duty or uninterrupted duty.

Functions provided by these relays, are phase-failure protection, ON/OFF indication, temperature compensation, and manual/automatic reset.

International Standard: IEC 60947-4-1



The relays can be mounted onto contactors or installed as single units.

### Selection and Ordering Data

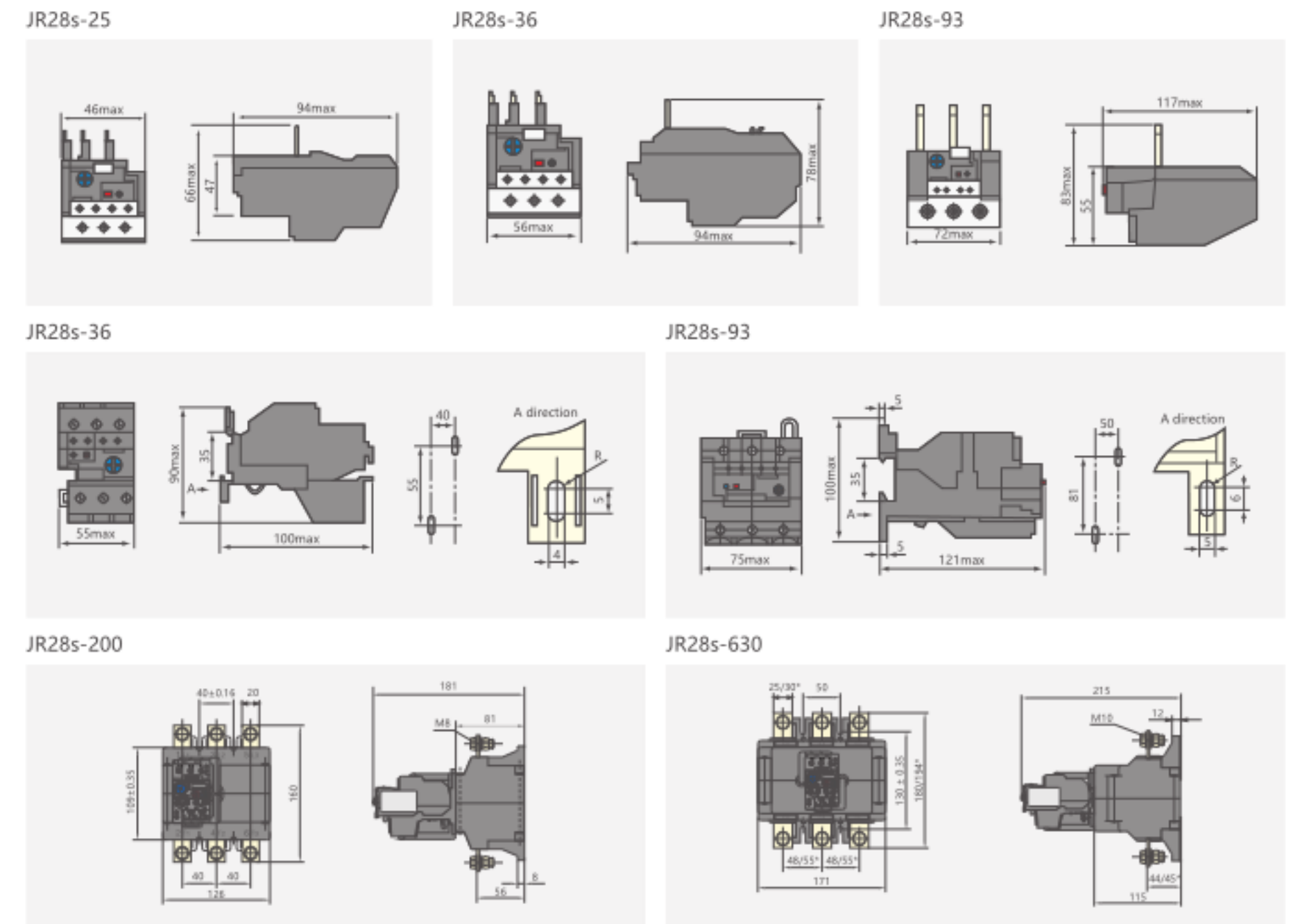
Products appearance	Rated current (A)	Matched fuse specifications(A)		Matched contactor model
		aM	gG	
	0.1~0.16	0.25	2	CJX2s-09/CJX2i-09 CJX2s-12/CJX2i-12 CJX2s-18/CJX2i-18 CJX2s-25/CJX2i-25
	0.16~0.25	0.5	2	
	0.25~0.4	1	2	
	0.4~0.63	1	2	
	0.63~1	2	4	
	1~1.6	2	4	
	1.25~2	4	6	
	1.6~2.5	4	6	
	2.5~4	6	10	
	4~6	8	16	
	5.5~8	12	20	
	7~10	12	20	
	9~13	16	25	
12~18	20	35	CJX2s-32/CJX2i-32 CJX2s-38/CJX2i-38	
17~25	25	50		
	23~32	40	63	
	28~36	40	80	
	23~32	40	63	CJX2s-40/CJX2i-40 CJX2s-50/CJX2i-50 CJX2s-65/CJX2i-65 CJX2s-80/CJX2i-80 CJX2s-95/CJX2i-95
	30~40	40	100	
	37~50	63	100	
	48~65	63	100	
	55~70	80	125	
	63~80	80	125	
	80~93	100	160	CJX2D-115 CJX2D-150 CJX2D-170
	80~104	125	200	
	95~120	125	224	
	110~150	160	250	

## JR28s Thermal Relay

### Selection and Ordering Data

Products appearance	Rated current (A)	Matched fuse specifications(A)		Matched contactor model
		aM	gG	
	80~125	125	200	CJX2-F115 CJX2-F150 CJX2-F185 CJX2-F225
	100~160	160	250	
	125~200	200	315	
	160~250	250	400	CJX2-F185 CJX2-F225 CJX2-F265 CJX2-F330 CJX2-F400 CJX2-F500 CJX2-F630
	200~315	315	500	
	250~400	400	630	
	315~500	500	800	
	400~630	630	800	

### Appearance and Installation Dimensions



## JR28 Thermal Relay

### Application

JR28 series thermal overload relay are suitable for overload and phase-failure protection of AC motors with frequency of 50/60Hz, voltage up to 690V, current up to 0.1-630A under 8-hours duty or uninterrupted duty.

Functions provided by these relays, are phase-failure protection, ON/OFF indication, temperature compensation, and manual/automatic reset.

International Standard: IEC 60947-4-1

The relays can be mounted onto contactors or installed as single units.

### Protection Characteristics

Item	NO.	Times the setting current		Release time	Test condition
Overload protection	1	1.05		>2h	Start from Cold status
	2	1.2		<2h	Start from Hot status right after item no.1
	3	1.5		<2m	
	4	7.2		2s < T <sub>p</sub> ≤ 10s	Start from Cold status
Phase failure protection		Any two phases	Another phase		
	5	1.0	0.9	>2h	Start from Cold status
	6	1.15	0	<2h	Start from Hot status right after item no.5

### Selection and Parameters

Number	Rated current A	For contactor
1301	0.1-0.16	CJX2-09 CJX2-12 CJX2-18 CJX2-25
1302	0.16-0.25	
1303	0.25-0.4	
1304	0.4-0.63	
1305	0.63-1	
1306	1-1.6	
1307	1.6-2.5	
1308	2.5-4	
1310	4-6	
1312	5.5-8	
1314	7-10	
1316	9-13	
1321	12-18	
1322	17-25	
1353	23-32	CJX2-32
2353	23-32	
2355	28-36	
3353	23-32	
3355	30-40	
3357	37-50	CJX2-40 CJX2-50 CJX2-65 CJX2-80 CJX2-95
3359	48-65	
3361	55-70	
3363	63-80	
3365	80-93	



JR28-25 (LR2-D13)



JR28-36 (LR2-D23)



JR28-93 (LR2-D33)

## JR28 Thermal Relay

### Selection and Parameters

Number	Rated current A	Contactor
4365	80-104	CJX2-95 CJX2-115 CJX2-150
4367	95-120	
4369	110-140	
5357	30~50	CJX2-F115~F185
5363	48~80	
5367	60~100	
5369	90~150	
5371	132~220	CJX2-F225~F265 CJX2-F225~F500 CJX2-F400~F630
7375	200~330	
7379	300~500	
7381	380~630	

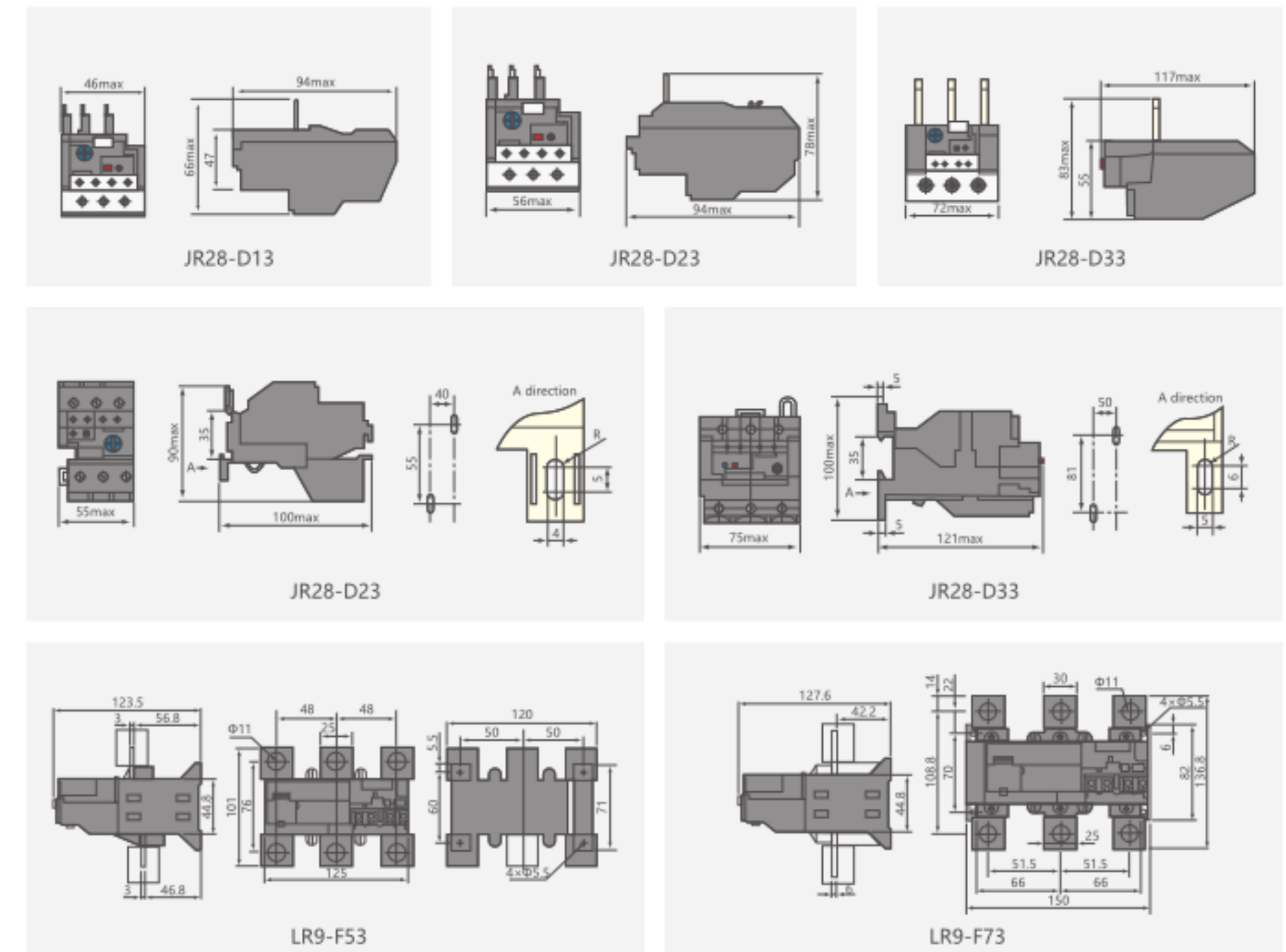


JR28-140 (LR2-D43)



JR28-200 (LR9-F53)

### Overall and Mounting Dimensions





## YCB1000 Variable Frequency Drive



### Product Features

1. Sensorless vector control with the best low frequency compensation ability
2. Designed with special radiator tree and switch power, all of such kinds of new technologies improve the performance
3. Several protective technologies and new component have been applied to the circuit, notably improve the anti-interference ability
4. Realize the preset frequency, or central frequency adjustable swing frequency function
5. Several phases speed operation controlled by build-in PLC or controlling terminal
6. Modulation Mode: space vector pulse width modulation SVPWN
7. Automatic energy saving operation: automatically optimize V/F curve to save the energy
8. Switch input channel: forward and reversal rotation control, 8 channel program switch input, 35 kinds of function
9. Strong overload performance: 150% rated current for 1 minute, 180% rated current for 3 seconds
10. Communication function: RS485 standard communication interface, support ASCII and RTU format MODBUS communication protocol

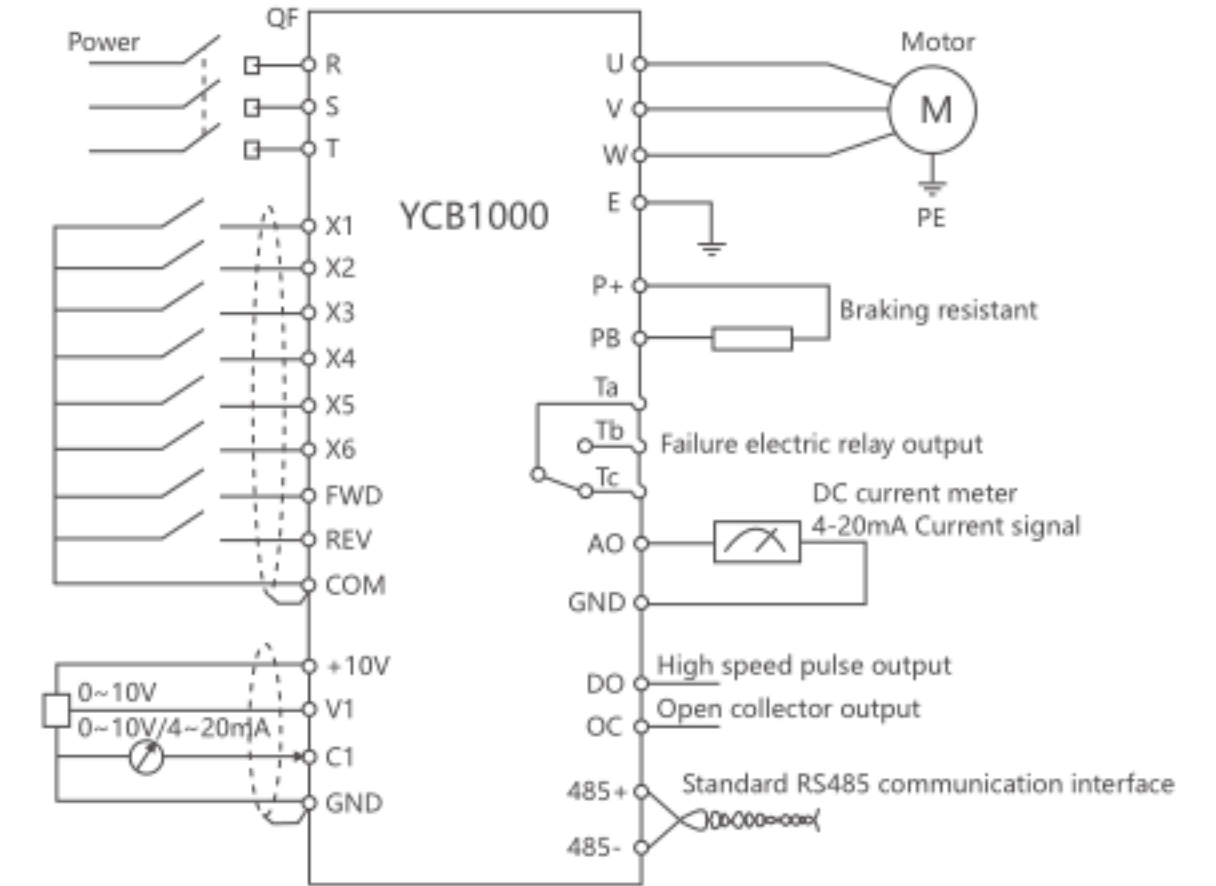
### Application Fields

1. Applied with boiler drum, induced draft fan, coal mine ventilator, etc
2. Applied in central air-condition energy saving optimization, air compressor energy saving renovation, music fountain, etc
3. Applied with water circulating pump, water supply pump, clear water pump, sewage pump, purification pump, constant pressure water supply, oilfield water injection pump, oil pump, etc
4. Applied with mine conveyer, coal feeder, mixer, pulverizer, converter, blast furnace, etc
5. Applied with extruder, bottle blowing machine, film blowing machine, film conveying belt, centrifugal separator, compressor, sprayer, etc

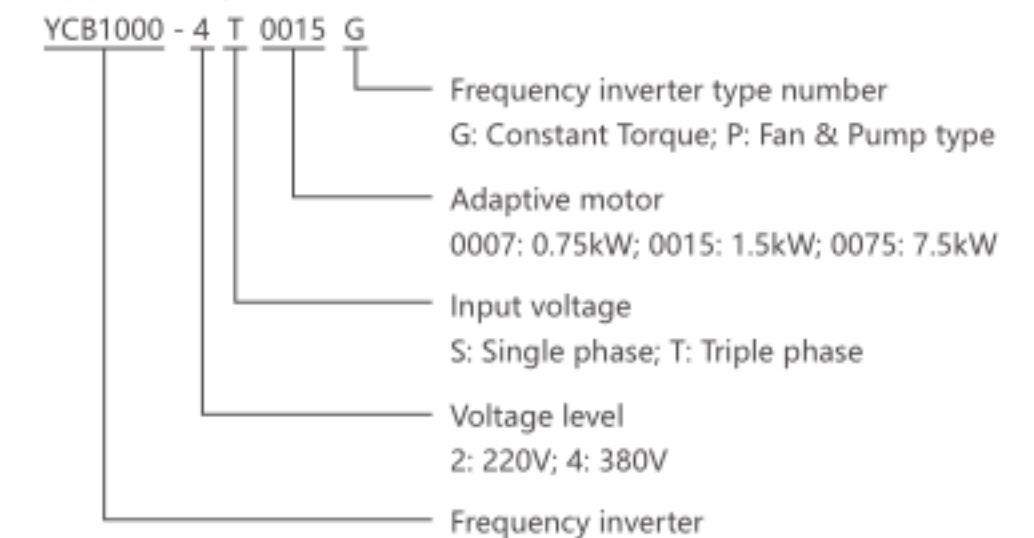
## YCB1000 Variable Frequency Drive



### Wiring diagram



### Type Designation



Note: Special requirements of customers can be negotiated separately.

## YCB1000 Variable Frequency Drive

### Technical Index

Item	Item Description	
Input	Rated voltage, frequency	Single phase 220V, three phase 200V, three phase 380V, three phase 480V; 50/60Hz
	Permissible working voltage	Effective value of voltage: 220V class 180~230V, 380V class 320~460V Voltage unbalanced rate: <3%; Frequency error: ≤+5%
Output	Rated voltage	Three phases 0~input voltage
	Frequency	0~400Hz
Overloading capacity	G type: 110% long term, 150% 1min, 180% 1s, 200% instantaneous trip P type: 120% 1min, 150% 1s, 180% instantaneous trip	
Control Function	Working mode	Electromagnetic vector PWM modulation
	Adjustment range	1:100
	Starting torque	100% rated torque at 3Hz
	Frequency accuracy	Digital setting: highest frequency×±0.01% Analog setting: highest frequency×±0.2%
	Freq dissolutions	Digital setting: 0.01Hz; Analog setting: highest frequency×0.1%
	Torque	Automatically rise torque up, according to output current it auto rise the torque up. Manually rise torque up, scope:1~30%
	V/F curve	1. Linear curve 2. Square curve
	Acceleration, slow-down time	0.1~6000s/min continuous adjustment.
	Compensation for rotation error	Setting scope: 0~20%, it can auto adjust the output frequency of inverter according to the motor loading, to reduce the speed change due the motor load fluctuates.
	Built-in PID	Easily form the loop control system, that it is suitable for pressure control, flux control and etc.
	Auto voltage regulation	When network voltage change, it can auto adjust the output of PWM and keep output voltage constant
	Auto energy-saving run	As load change, it auto optimize the V/F curve, to realize the energy-saved running.
	Running Function	Freq setting
Running command		Control of operation panel, control of outer terminals, control of serial communication
Analog output terminal		0~10V DC voltage signal output, can realize the output of frequency, current and etc, physical parameters
Input signal		Positive/negative rotation signal, multi-step signal, fault signal, resetting signal
Output signal		Programmable integrated circuit opening output, fault signal output

## YCB1000 Variable Frequency Drive

Item	Item Description	
Braking Function	Braking by power consumption	Outer connected to braking resistance, maxi braking torque 100%
	Brake by direct current	When starting or stopping, it is optional respectively, action frequency: 0-20Hz, action voltage level: 0-20%, action time 0-30s, continuously adjustable.
Other Function	Jumpin frequency, point function, counter, rotation speed track, restart after instan-staneous power off, upper and lower frequency limit, acceleration and slow-down modes adjustable, cymometer and voltmeter output, multi-step / program running, two lines / three lines control, double polar control, selection of multifunctional input terminal, auto reset after fault, 485 serial communication.	
Protection Function	Input protection against phase failure, over-current protection, overloading protection, under-voltage protection, overheating protection, output short circuit protection and etc.	
LED Display	It can display inverter real-time working status, monitoring parameters, function data, fault codes and etc.	
Optional Accessories	Braking parts, remote and operation panel and connection wire, communication panel	
Ambient Conditions	Working site	Indoor, without direct sunshine, no dust, corrosive gas, flammable and explosive gas, oil fog, steam, water drop, salty
	Altitude	Altitude less than 1000m
	Ambient temperature	-10~+45°C (The only machine: -10~+50°C)
	Humidity	20~90%RH, Without water condensation
	Vibration	<0.5G
	Storage temperature	-20~+60°C
Structure	Protection grade	IP20
	Cooling mode	Fan cooling
	Mounting mode	Wall hung type, standing type.



**Motor Control and protection Inverter & Soft-Starter**

**YCB1000 Variable Frequency Drive**

**Structure and Size**

YCB1000/380V three phase				Appearance Size (mm) L×W×D	Aperture Size of Panel (mm) L×H
No.	Model	Power	Voltage		
1	YCB1000	0.75kW	380V	170×125×170	Panel: 75×55 Panel Cover: 95×61
2		1.5kW			
3		2.2kW			
4		4kW		220×150×186	
5		5.5kW		245×150×188	Panel: 93×70 Panel Cover: 131×91
6		7.5kW			
7		11kW		340×230×210	
8		15kW			
9		18.5kW		450×280×260	
10		22kW			
11		30kW		520×290×290	
12		37kW			
13		45kW		580×290×320	
14		55kW			
15		75kW		630×380×350	Panel: 131×70 Panel Cover: 156×80
16		93kW			
17		110kW		630×380×380	
18		132kW			
19		160kW		880×510×400	
20		185kW			
21		200kW		980×510×400	
22		220kW			
23		260kW		1050×710×420	
24		280kW			
25		315kW		1900×800×420	
26		350kW			
27		400kW			
28		500kW			

YCB1000/220V single phase				Appearance Size (mm) L×W×D	Aperture Size of Panel (mm) L×H
No.	Model	Power	Voltage		
1	YCB1000	0.75kW	220V	142×85×122	Panel: 140×73 Panel Cover: 175×87
2		1.5kW			
3		2.2kW			

# YCB2000

## High-performance vector Inverter

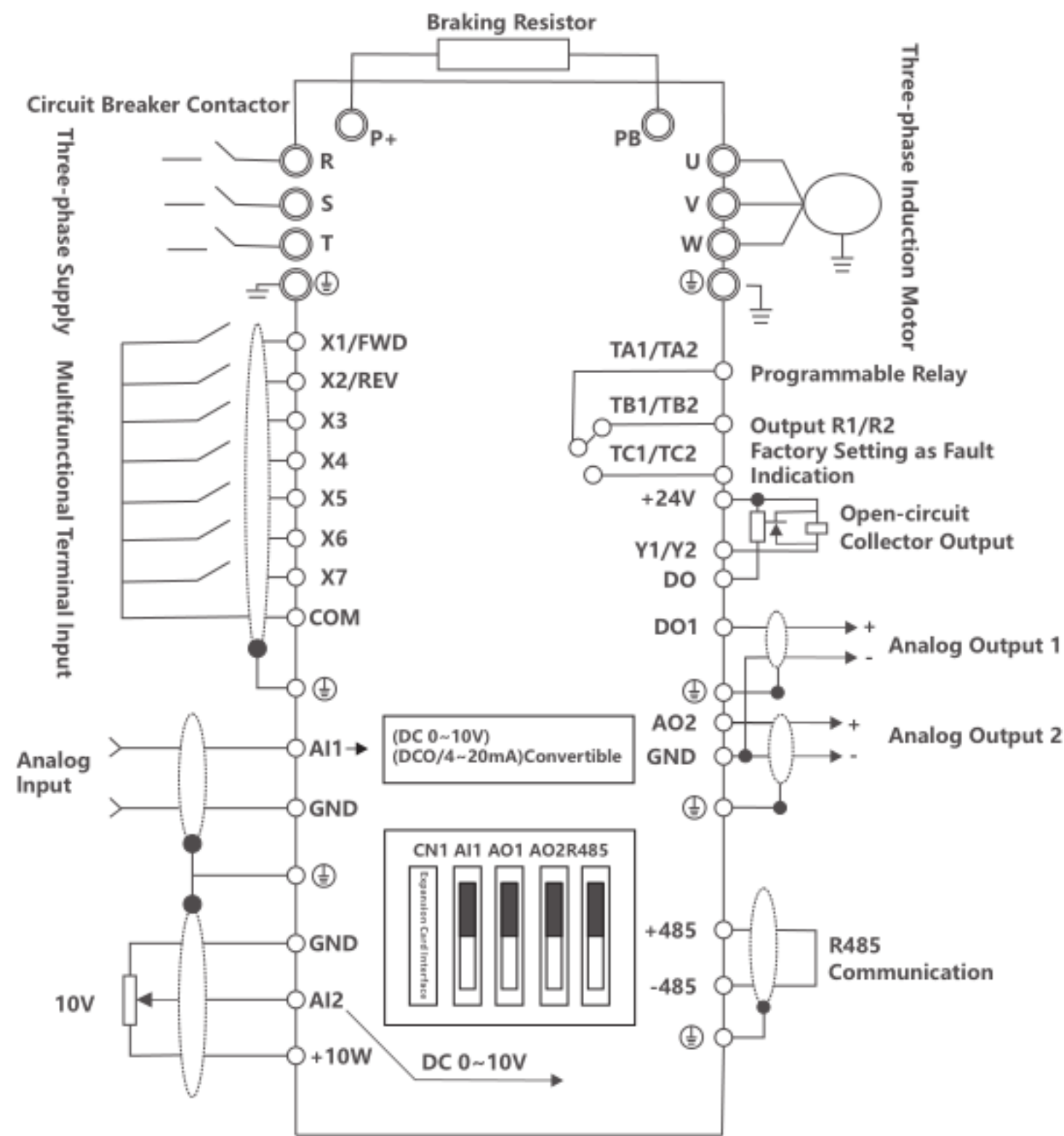


## YCB2000 High-performance vector Inverter

### Product Features

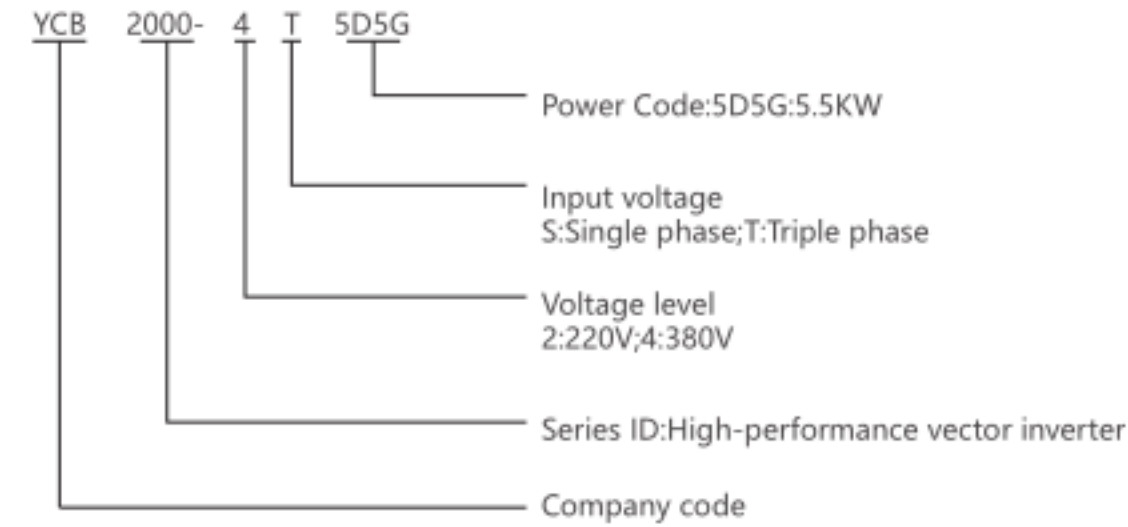
Using the TI latest generation of high-speed motor control special DSP, and innovative use of three core processing technology platform. Ultra-high speed computing ensures that complex vector calculations are fully implemented.  
 No PG vector control, using advanced motor model algorithm, so that the open - loop torque control is realized by closed - loop algorithm.  
 Omni-directional over-current, over-voltage, overload suppression and stall prevention function.  
 Perfect power-on self-check function, wide voltage range design.  
 Integrated IGBT module, better performance, higher reliability.

### Product Features



## YCB2000 High-performance vector Inverter

### Type Designation



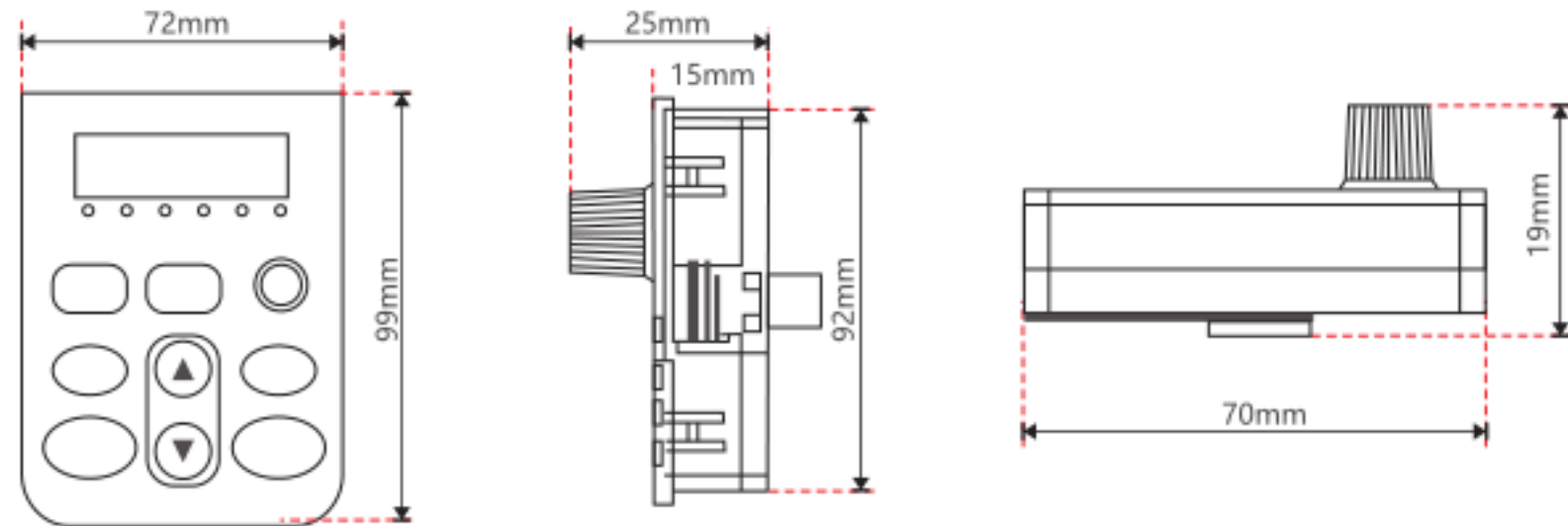
### Technical Specifications

Input Voltage	Rated power (KW)	Rated Output Current (A)	Adapted loss (W)
Single Phase 230V±15%	0.75	5	0.75
	1.5	7	1.5
	2.2	10	2.2
Three Phase 380V±15%	0.75	2.5	0.75
	1.5	3.7	1.5
	2.2	5	2.2
	4.0/5.5	9.0/13	4.0/5.5
	5.5/7.5	13/17	5.5/7.5
	7.5/11.0	17/25	7.5/11.0
	11.0/15.0	25/32	11.0/15.0
	15.0/18.5	32/37	15.0/18.5
	18.5/22.0	37/45	18.5/22.0
	22.0/30.0	45/60	22.0/30.0
	30.0/37.0	60/75	30.0/37.0
	37.0/45.0	75/90	37.0/45.0
	45.0/55.0	90/110	45.0/55.0
	55.0/75.0	110/150	55.0/75.0
	75.0/90.0	150/176	75.0/90.0
90.0/110.0	176/210	90.0/110.0	
110.0/132.0	210/250	110.0/132.0	



**Motor Control and protection Inverter & Soft- Starter**  
**YCB2000 High-performance vector Inverter**

**Appearance and Dimension of Keypad**



**Whole Structure**

Power(kW)	A(mm)	B(mm)	H(mm)	W(mm)	D(mm)	Mounting hole size (mm)	Note
	Installation size			Outline size			
0.75~2.2	115	175	185	125	160	4	-
4.0~7.5	136	230	246	150	176	5	-
11~18.5	201	306	320	218	215	5	-
22	150	404	420	235	210	6.5	-
30~37	195	433	460	270	220	8	-
45~55	240	537	565	320	275	8	-
75~110	274	642	670	380	272	8	-

**Dimensions**

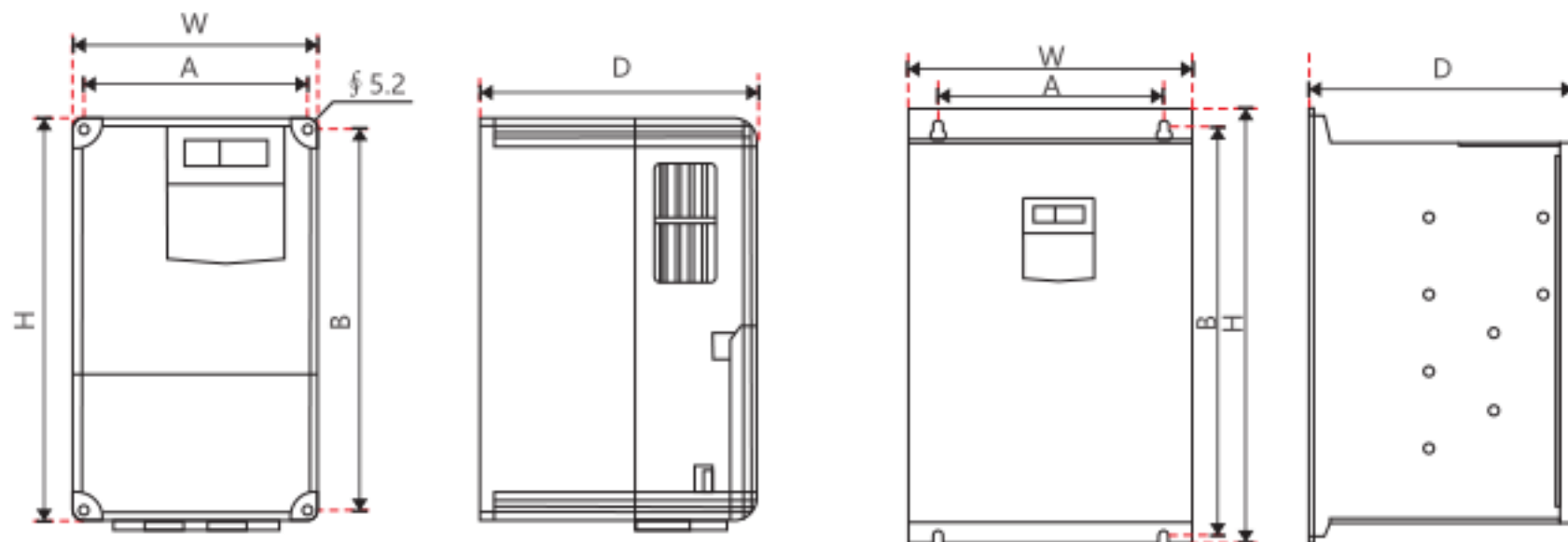


Figure A-1 Outline size for 7.5KW and below models(380V)

Figure A-2 Outline size for 11- 110KW model(380V)

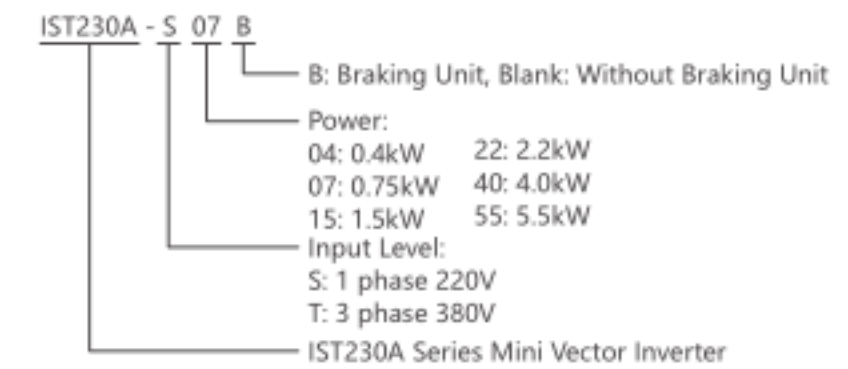
**Motor Control and protection Inverter & Soft- Starter**  
**IST230A Series Mini Vector Inverter**

**General**

IST230A Series Mini Inverter is a compact and economical inverter with the following characteristics:  
 compact structure, high cost performance;  
 easy installation, suitable for DIN rail installation (5.5KW and below) ;  
 the ports are easy for connection, optional external keyboard;  
 V/F control; Built-in PID control; RS485 communication can be used for textile, paper-making, machine tools, packaging, fans, water pumps and a variety of automatic production equipment drive.



**Type Designation**

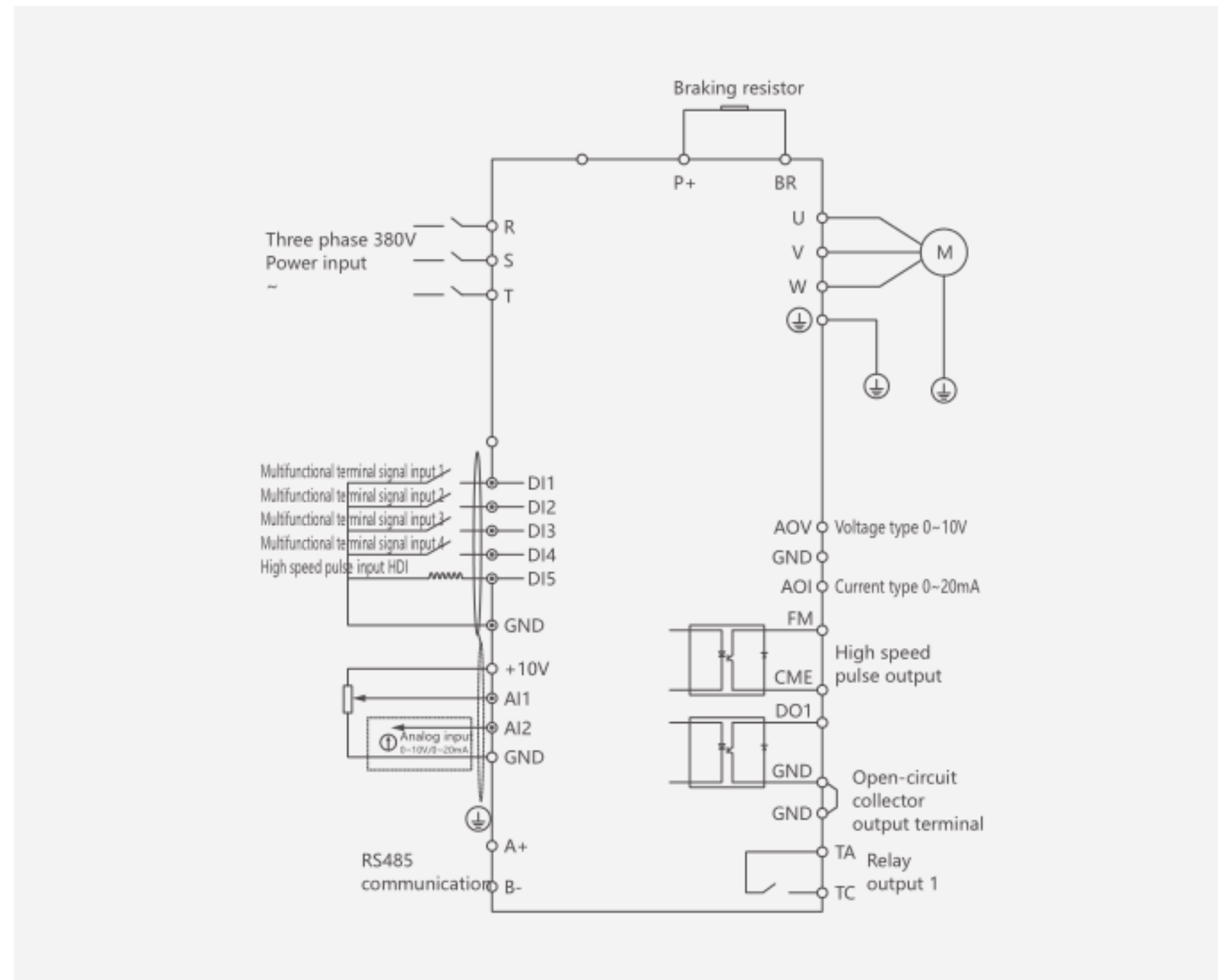


**Technical Specifications**

Model	Rated power (kW)	Rated output current (A)	Adaptable motor	
			kW	HP
One phase power supply: 220V, 50Hz/60Hz				
IST230A-S04B	0.4	2.5	0.4	0.5
IST230A-S07B	0.75	4.0	0.75	1
IST230A-S15B	1.5	7.0	1.5	2
IST230A-S22B	2.2	9.6	2.2	3
Three phase power supply: 380V, 50Hz/60Hz				
IST230A-T07B	0.75	2.1	0.75	1
IST230A-T15B	1.5	3.8	1.5	2
IST230A-T22B	2.2	5.1	2.2	3
IST230A-T40B	4	9	4	5.5
IST230A-T55B	5.5	13	5.5	7.5

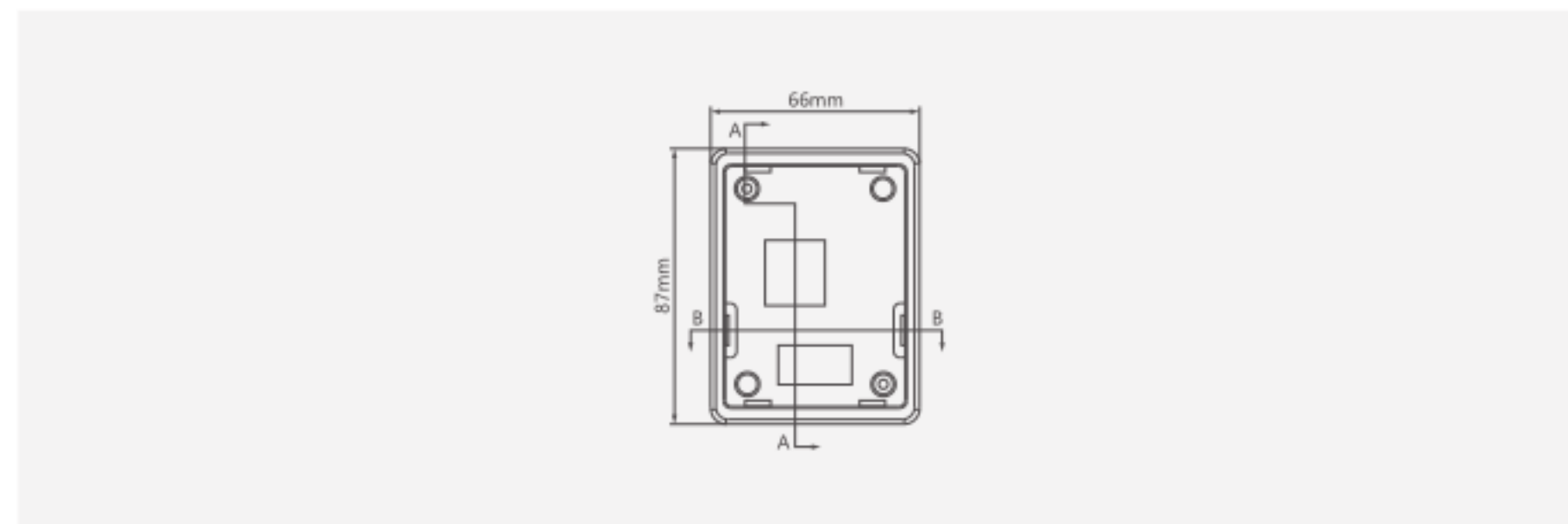
## IST230A Series Mini Vector Inverter

### Wiring Diagram



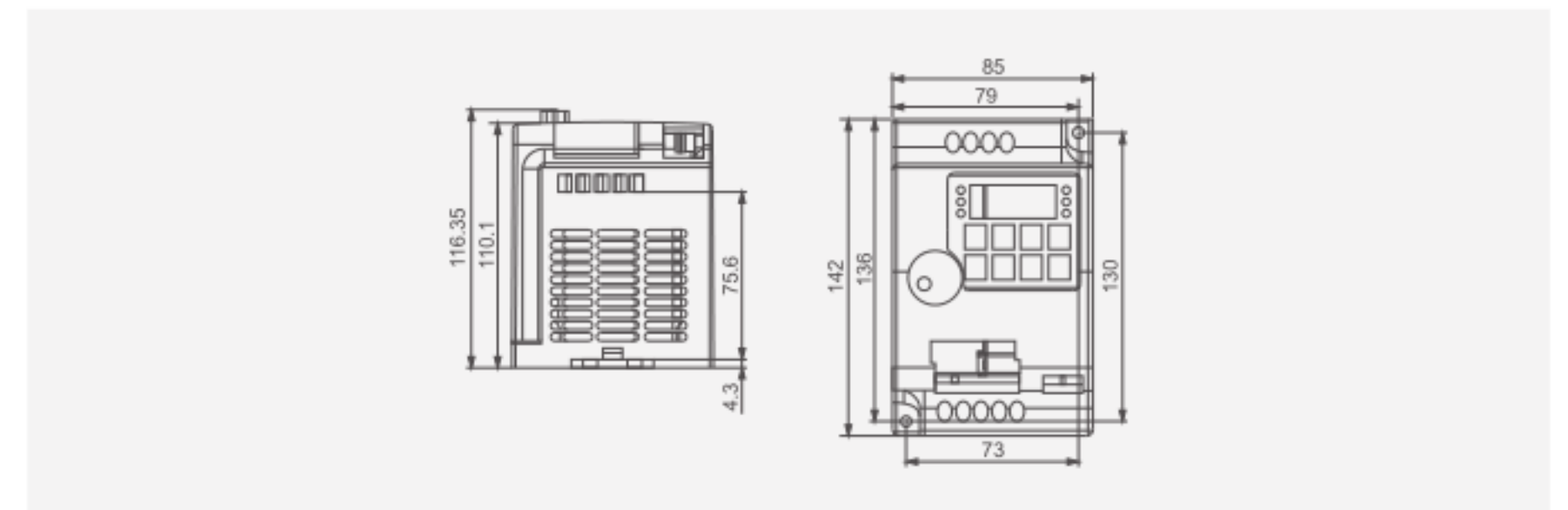
### Technical Index

1. Installation Dimension Diagram of Outer Panel

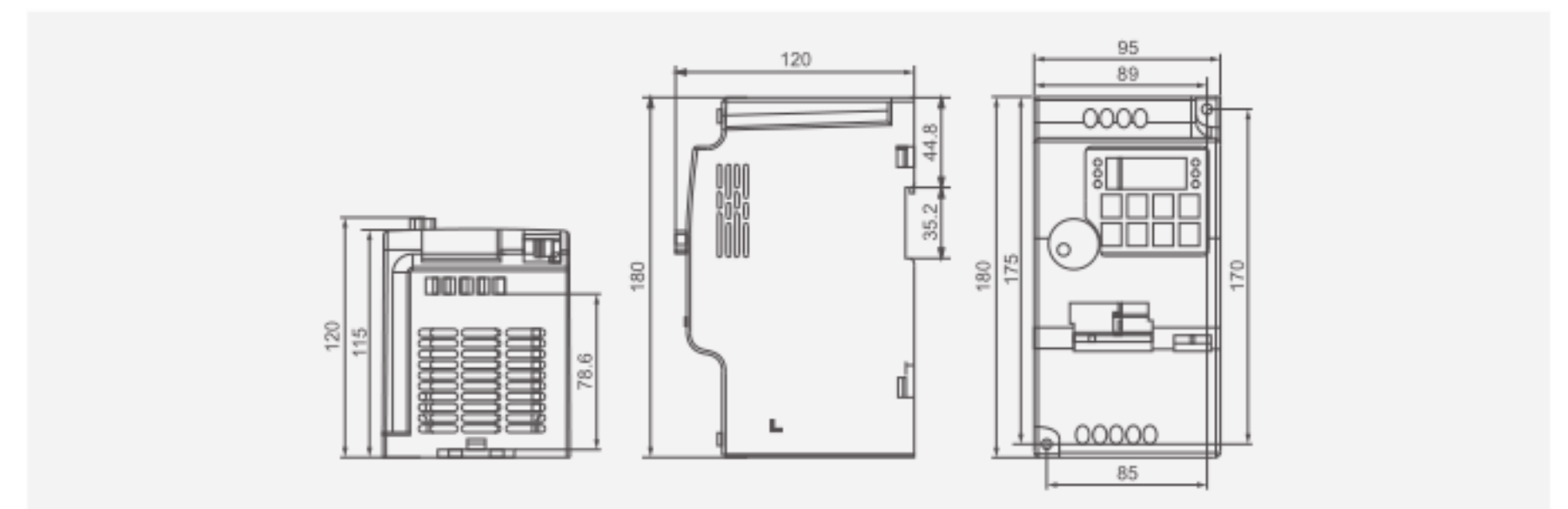


## IST230A Series Mini Vector Inverter

2. Product Dimension Diagram, Installation Diagram 0.75~2.2kW



4~5.5kW





## IST230A Series Mini Vector Inverter

### Technical Index

Item	Item Description	
Input	Rated voltage, frequency	1PH AC 220V 50/60Hz;3PH AC380V 50/60Hz
	Permissible working voltage	220V:170V~240V;380V:330V~440V
Output	Rated voltage	0~input voltage
	Frequency	0~400Hz
Control mode		Sensorless vector control, V/F control
Display		Five-digit tube display, indicator light display, display setting frequency, output frequency, output current, rotation direction, rotation speed, fault, etc
Control function	Freq dissolutions	Digital setting: 0.01Hz; Analog setting: highest frequency×0.1%
	Output frequency accuracy	0.1Hz
	V/F curve	V/F curve can be arbitrarily set to meet the needs of various loads
	Torque increase	Automatically rise torque up, according to output current it auto rise the torque up.Manually rise torque up, scope:0~20%
	Multi-function input terminal	there are 4 multi-functional input terminals, achieve functions as following: 15 speed control, program running 4 acceleration/deceleration switch, UP/DOWN function, emergency stop , etc
	Multi-function output terminal	There is one multi-function output terminal, to achieve function as following: indications of operating, zero speed, external abnormalities, program operation and alarm output
	Acc./Dec. time setting	0~999.9s can be set separately to Acc./Dec. time
	PID Setting	Built-in PID control
Other Function	RS485	Standard RS485 communication function (Modbus)
	Frequency setting	Analog quantity 0~10V, 4~20mA, keyboard direct setting, RS485 setting, UP/DOWN setting and other waysNote: AVI terminal can select analog voltage input (0~10V) or analog current input (4~20mA) by switching switch J2.
	Auto voltage regulation	When network voltage change, it can auto adjust the output of PWMand keep output voltage constant
	Counter	Built-in 2 groups of counters
	overloading protection	Constant torque 150%/1 min, variable torque 120%/1 min
Protection Function	over-voltage protection	Over-voltage protection can be set
	under-voltage protection	Under-voltage protection can be set
	Other protection	Short circuit protection, over current protection, parameter lock, etc
	Ambient temperature	-10- +40°C
Ambient Conditions	Humidity	20~90%RH, Without water condensation
	Altitude	Altitude less than 1000m
	Vibration	<0.5G
	Cooling mode	Cooling mode
Structure	Protection grade	IP20
	Mounting mode	Wall hung type, standing type

## YCQR2 Soft Starter

### Product Features



AC squirrel-cage type asynchronous electric motor is a popular electric apparatus. By applying intelligent, the apparatus completes stable load making capacity and reduces impact strength to electrical network; it can work with stable and reliable performance. YCQR2 Model soft starter completes Human-machine interface. Applied to a scope of 5.5~600KW in thermal power plant, hydraulic power plant, metallurgy, chemical industry, architecture , cement plant ,mining industry as well as environmental protection projects. It' s the ideal replacer of Y-Δ Starter, reactor starter, auto-transformer starter etc.

The advanced technology applied prevents the heavy starting current of AC electric motor, influence to voltage quality and power consumption in loop as well as the impact strength to electric apparatus.

Microprocessor is core of YCQR2 soft starter. It controls big power thyristor components, to limit starting current, voltage ramp start, soft stop. Technical parameters can be set depending different load. It also has over current, overload and out-of-phase protections. Output voltage of soft start is ascending as per setups, then electric motor torque finish starting according to optimized speed-up curve, thyristor components breaks, and bypass AC contact starts.

### Functions of YCQR2 Soft Starter

1. Double Single-chip machine automatic digital control;
2. Parameters like starting torsion current, voltage, and time to be set according to different load, to obtain optimal torque control feature.
3. Smooth and gradual starting process, to reduce the impact strength of electric network, vibration and noise of apparatus, to lengthen lifetime of mechanical driver and to improve working environment.
4. Starting current is adjustable as per load, to reduce starting consumption and to make optimal torque with smallest current.
5. Soft stop function – make long lifetime of electric contacts, meet mechanical requirements under various occasions.
6. Over-current protection, overload protection and thermal protection, out-of-phase protection.
7. Extrocontrol interface to facilitate multi-functions: digital delayed start, transient stop control input, start output of time delay relay, fault relay output.
8. No special requirements on the phase sequence to input power.
9. Free stop and soft stop, soft stop time is adjustable.
10. Complete digital control and extrocontrol
11. Standard 485 interface
12. Output 0-20MA analog current
13. Innovative structure, small volume, stable performance, easy installation and operation.
14. Harvard type single-chip machine has strong anti-interruption capacity to prevent the control system from severe electric interruption.



## YCQR2 Soft Starter

### Main Technical Parameter of YCQR2 Series Soft Starter

Item No.	YCQR2
Electric motor power(400v.h)/kw	5.5-600kw
Rated working current Ie/A	10-1200
Rated working voltage / V	380V±15%
Frequency /Hz	50Hz
Continuous working current /A	115% Ie
Rated control voltage/V	AC 220V-240V/50Hz
Ambient temperature /°C	30°C/55°C

### Function code table and parameter description

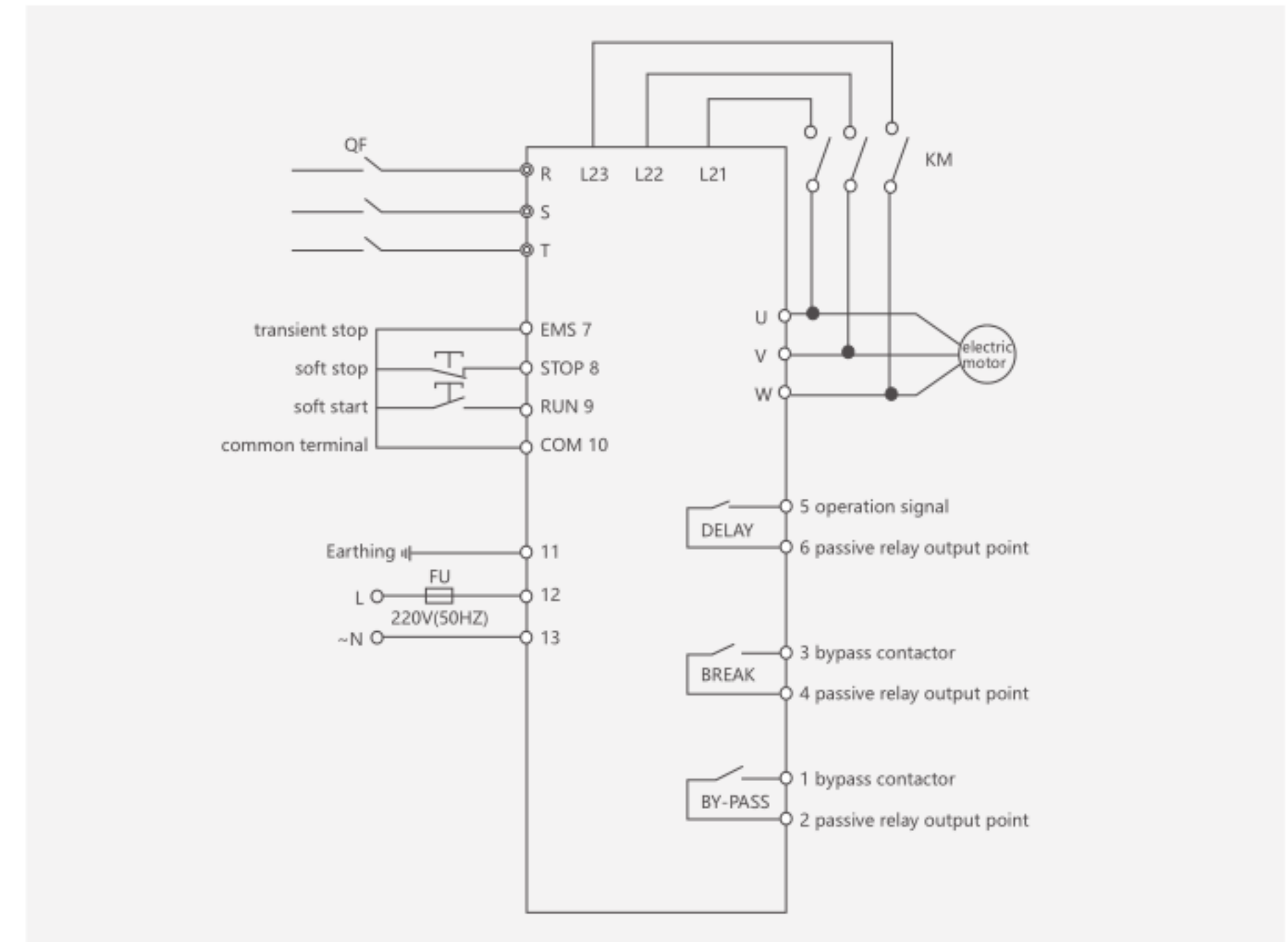
Function		Set Range	Factory Value	Illumination
Code	Name			
0	Start Voltage	30-80%	30%	Voltage mode effective
1	Rising Time	0-60S	10S	Voltage mode effective
2	Soft Stop Time	0-60S	2S	Stop freely when set as 0
3	Start Delay	0-240S	0S	Two lines way effective
4	Limiting start current	150-500%	250%	Limiting current mode effective
5	Interlock delay	0-240S	0S	
6	Transient stop set	0-1	0	0:yes 1:no
7	Restart after transient stop	0-1	0	0:yes 1:no
8	Control mode	0-1	1	0:limiting current 1:voltage
9	control way	1-6	1	1:keyboard 2:outer control 3:keyboard+outer control 4:PC 5:PC+keyboard 6:PC+outer control
A	0-20mA	0-1	0	0:full scale(20mA)corresponding to 400% 1:full scale(20mA)corresponding to 130%
B	Display Mode	0-132	0	0:by percent of rated voltage XXX:actual rated power value
C	Local Address	1-30	0	For serial-port communication
D	Set parameter modification	0-1	0	0:yes 1:no
E	Overload multiple set	50-200%	150%	
F	Out-of-phase protection	0-1	0	0:yes 1:no
EY	Modification set protection	The data should not be modified in this condition		
-A	Start and rising condition	1.displaying current value XXXA or percent of rate value. 2.Delay start time displays time EOTTT		
-A	Operation condition			
-A	Soft stop condition			

Note:Values XO-9

Even if using the voltage mode,the limiting current is still effective,and its value is 400%.

## YCQR2 Soft Starter

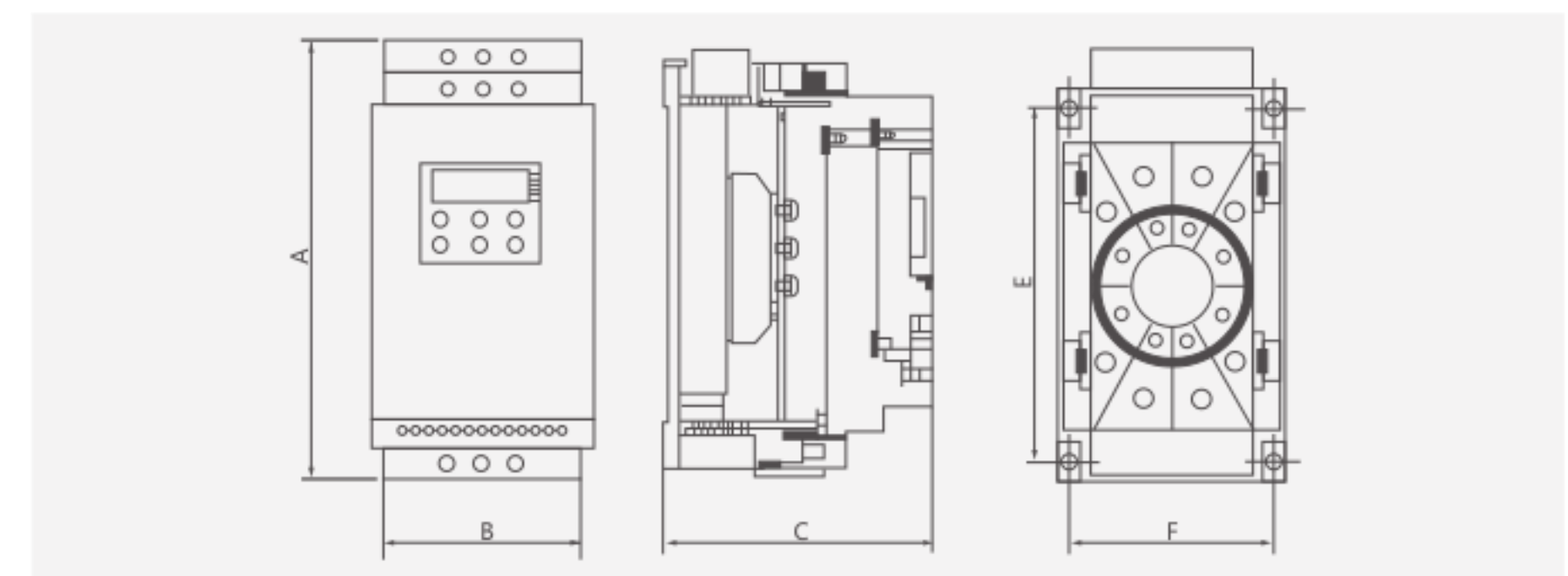
### Wiring diagram



### Overall and mounting dimensions(mm)

Plane Structure Picture And Size (see Picture 10.1 and 10.2)

Plane Structure Picture Of Ycqr2 55kw Type





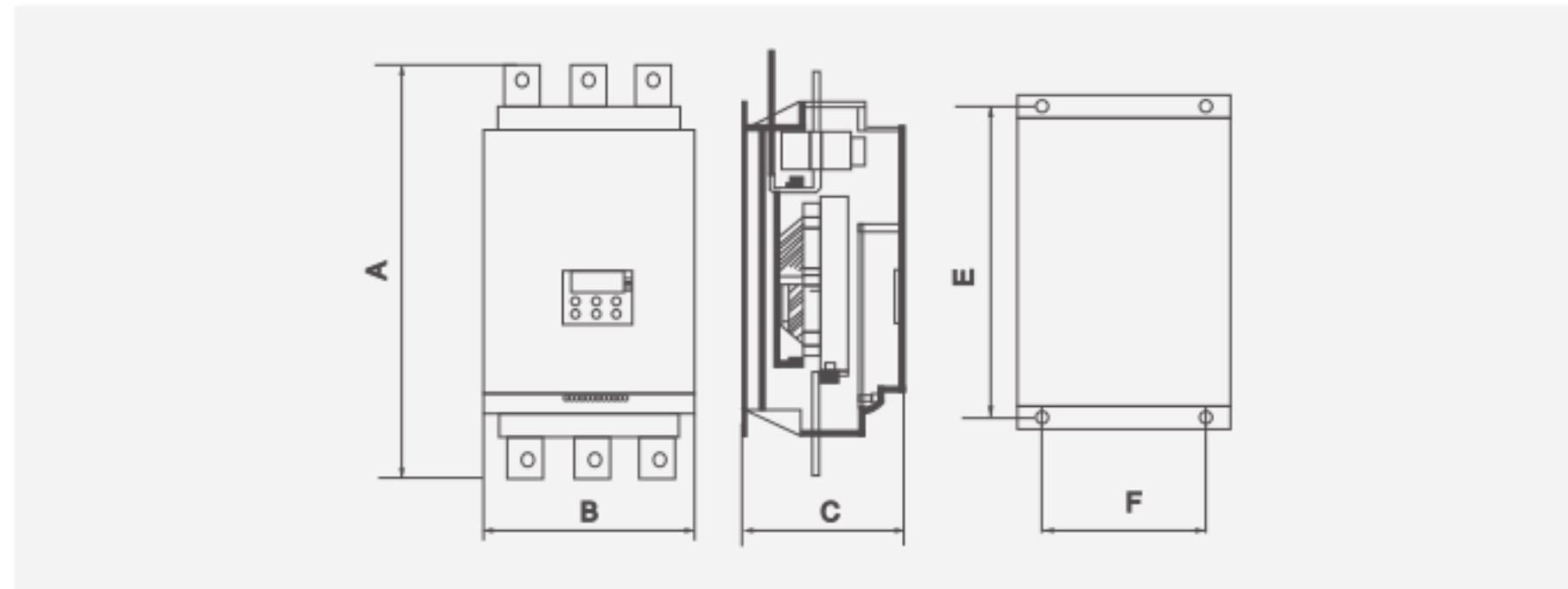
## Motor Control and protection Inverter & Soft-Starter

### YCQR2 Soft Starter

Structure Size Of YCQR2 55KW Type

Model	Power (KW)	Rated Current (A)	Outline Size(mm)			Installing Size(mm)		Installing Hole Dimension
			A	B	C	E	F	
YCQR2	5.5-22	10-40	265	154	165	219	140	Φ6
YCQR2	30	54	265	154	165	219	140	Φ6
YCQR2	37	68	265	154	165	219	140	Φ6
YCQR2	45	80	265	154	165	219	140	Φ6
YCQR2	55	100	265	154	165	219	140	Φ6

Plane Structure Picture of YCQR2 75-600KW Type



Structure Size of YCQR2 75-600KW Type

Model	Power (KW)	Rated Current (A)	Outline Size(mm)			Installing Size(mm)		Installing Hole Dimension
			A	B	C	E	F	
YCQR2	75	135	531	260	204	380	230	Φ8
YCQR2	90	160	531	260	204	380	230	Φ8
YCQR2	115	200	531	260	204	380	230	Φ8
YCQR2	132	250	531	260	204	380	230	Φ8
YCQR2	160	300	531	260	204	380	230	Φ8
YCQR2	200	360	564	290	204	260	260	Φ8
YCQR2	250	450	564	290	204	260	260	Φ8
YCQR2	320	560	564	290	204	260	260	Φ8
YCQR2	400	800	600	350	220	480	320	Φ8
YCQR2	500	1000	600	350	220	480	320	Φ8
YCQR2	600	1200	600	350	220	480	320	Φ8