



NC7 Series AC Contactor 09~620A

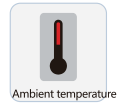
1. General

The NC7 series AC contactor (hereinafter referred to as "contactor") is mainly used in the circuit with an alternating current of 50Hz (or 60Hz), rated operational voltage up to 690V, and rated operational current up to 620A under the usage category of AC-3/400V; this contactor is mainly used for remotely closing and breaking circuits, and can be combined with an appropriate thermal overload relay to form a electromagnetic starter so as to protect the circuits likely to be overloaded in operation; the contactor is well suited for frequently starting and controlling AC motors.

Standard: IEC60947-4-1

2. Operating conditions

2.1 Ambient air temperature: $-5^{\circ}\text{C} \sim +40^{\circ}\text{C}$, its mean value not greater than $+35^{\circ}\text{C}$ within 24 hours.



Ambient temperature

2.2 Atmospheric conditions:

When the maximum temperature is $+40^{\circ}\text{C}$, the relative humidity of the air shall not be higher than 50%; a higher relative humidity is allowed at a lower temperature, e.g., up to 90% at 20°C . Special measures shall be taken for the condensation occasionally produced due to temperature change.



Altitude

2.3 Altitude: not higher than 2000m.

2.4 Pollution grade: 3



No Pollution

2.5 Installation classification: III

2.6 Installation condition:

the installing surface shall be inclined at not greater than $\pm 5^{\circ}$ to the vertical.

2.7 Impact vibration:

The product shall be installed in the place free of remarkable shake, impact and vibration.

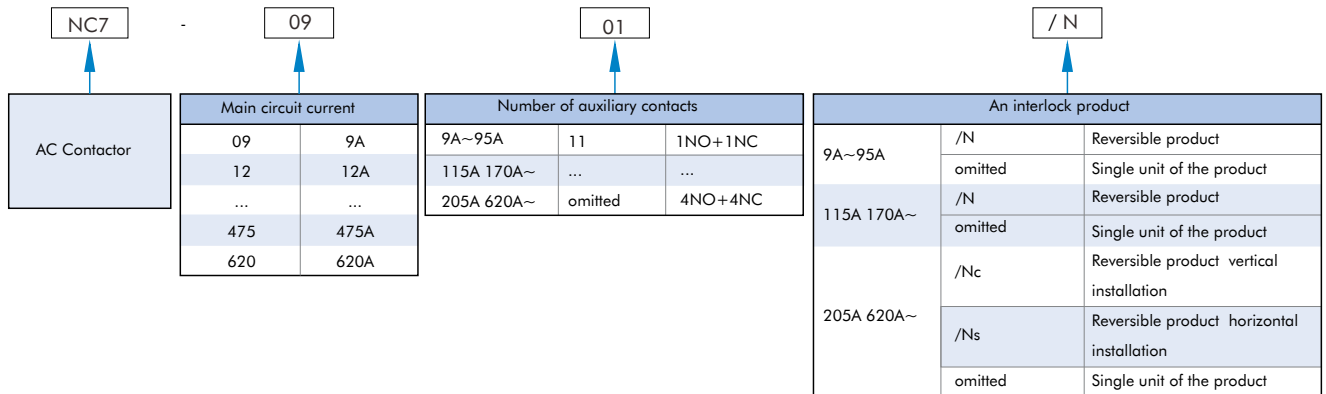
2.8 NC7-06~38 : IP20

NC7-09~170 : IP10

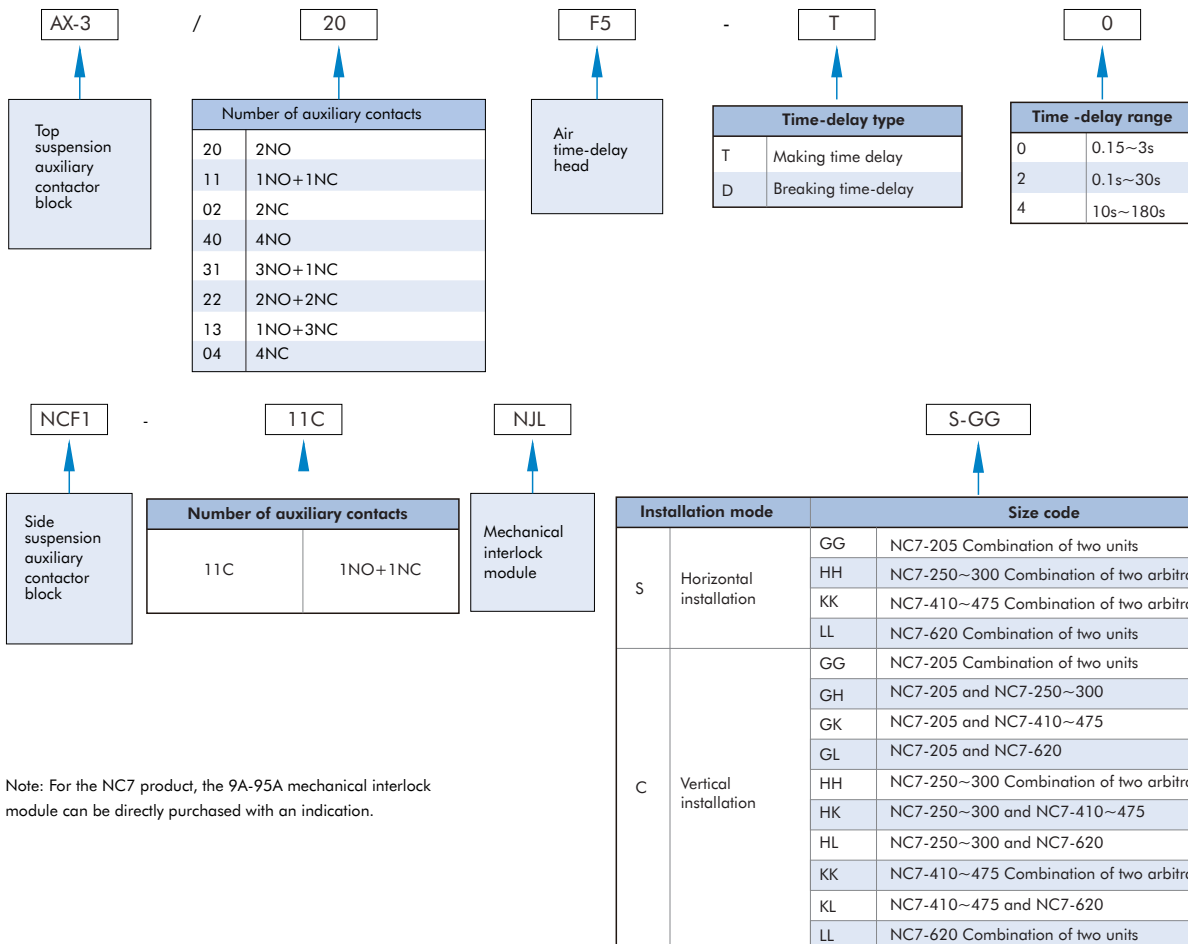
NC7-205~620: IP00(IP20 front face with shrouds SHD)

3. Type and meaning

3.1 Product type and meaning

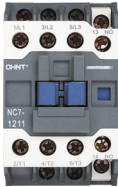
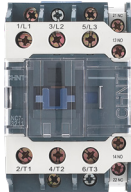


3.2 Accessory type and meaning

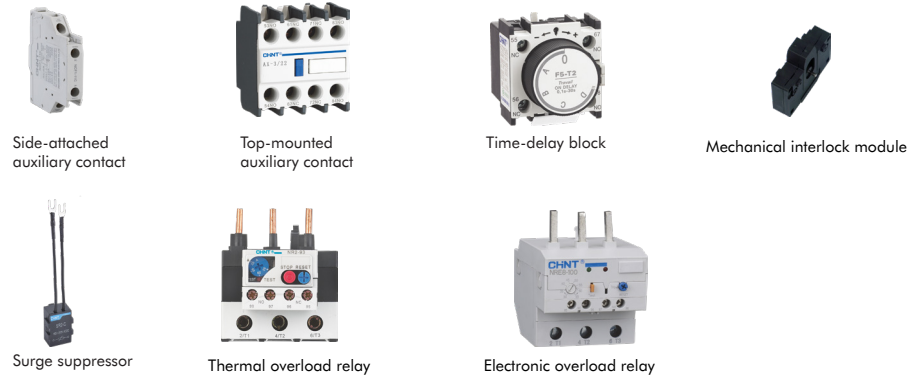


Note: For the NC7 product, the 9A-95A mechanical interlock module can be directly purchased with an indication.

4. Quick selection table

Specified current		9A		12A		18A		22A		25A		32A		38A	
		<div></div> <div></div>													
Number of the auxiliary contacts provided with the body itself	1 NO+1NC auxiliary contact	NC7-0911		NC7-1211		NC7-1811		NC7-2211		NC7-2511		NC7-3211		NC7-3811	
IEC/EN 60974-4-1		KW	A	KW	A	KW	A	KW	A	KW	A	KW	A	KW	A
Appointed free air heat generation current (A)			20		20		32		32		40		50		50
Rated operational current and power	380V/400V(AC-3)	4	9	5.5	12	7.5	18	11	22	11	25	15	32	18.5	38
	380V/400V(AC-4)	1.5	3.5	2.2	5	3	7.7	3	7.7	4	8.5	5.5	12	5.5	12
	660V/690V(AC-3)	5.5	6.6	7.5	8.9	10	12	11	14	15	18	18.5	22	18.5	22
	660V/690V(AC-4)	1.1	1.5	1.5	2	3.7	3.8	3.7	3.8	4	4.4	5.5	7.5	5.5	7.5

Accessories which can be further attached



Specified current		40A		50A		65A		80A		95A	
											
Number of the auxiliary contacts provided with the body itself		NC7-4011		NC7-5011		NC7-6511		NC7-8011		NC7-9511	
IEC/EN60974-4-1		kW	A	kW	A	kW	A	kW	A	kW	A
Appointed free air heat generation current(A)		60		80		80		110		110	
Rated operational current and power	380V/400V(AC-3)	18.5	40	22	50	30	65	37	80	45	95
	380V/400V(AC-4)	7.5	18.5	11	24	15	28	18.5	37	22	44
	660V/690V(AC-3)	30	34	37	39	37	42	45	49	45	49
	660V/690V(AC-4)	7.5	9	11	12	11	14	15	17.3	18.5	21.3



Side-attached auxiliary contact



Top-mounted auxiliary contact



Time-delay block



Mechanical interlock module



Surge suppressor



Thermal overload relay



Electronic overload relay

Specdied current		115A		150A		170A	
							
Number of the auxiliary contacts provided with the body itself		NC7-115		NC7-150		NC7-170	
IEC/EN60974-4-1		kW	A	kW	A	kW	A
Appointed free ir heat generation current(A)			200		200		275
	380V/400V(AC-3)	55	115	75	150	90	170
	380V/400V(AC-4)	55	115	75	150	90	150
	660V/690V(AC-3)	80	86	100	107	110	118
	660V/690V(AC-4)	80	86	100	107	110	107

Accessories which can be further attached



Top-mounted auxiliary contact



Time-delay block



Side-attached auxiliary contact



Thermal overload relay



Electronic overload relay



Mechanical interlock module

Specdfied current		205A		250A		300A	
							
without auxiliary contacts,can mount two Top suspension auxiliary contacts	mount two AX-3/22 4NO+4NC	NC7-205		NC7-250		NC7-300	
	Other mode	Note		Note		Note	
IEC/EN60974-4-1		kW	A	kW	A	kW	A
Appointed free air heat generation current(A)			275		315		380
Rated operational current and power	380V/400V(AC-3)	110	205	132	250	160	300
	380V/400V(AC-4)	110	205	132	250	160	300
	660V/690V(AC-3)	129	137	160	170	220	235
	660V/690V(AC-4)	129	137	160	170	220	235



Top-mounted auxiliary contact



Time-delay block



Mechanical interlock module



Thermal overload relay



Electronic overload relay

Specified current		410A		475A		620A	
							
without auxiliary contacts,can mount two Top suspension auxiliary contacts	mount two AX-3/22	NC7-410		NC7-475		NC7-620	
	4NO+4NC						
	Other mode	Note		Note		Note	
IEC/EN60974-4-1		kW	A	kW	A	kW	A
Appointed free air heat generation current(A)			450		630		800
Rated operational current and power	380V/400V(AC-3)	200	410	265	475	335	620
	380V/400V(AC-4)	200	410	265	475	335	620
	660V/690V(AC-3)	280	303	335	353	450	462
	660V/690V(AC-4)	280	303	335	353	450	462

Accessories which can be further attached



Top-mounted auxiliary contact



Time-delay block



Mechanical interlock module



Thermal overload relay



Electronic overload relay

Modularized accessories which can be installed additionally

 AX-3 Auxiliary contact	Number of auxiliary contacts	4NO	AX-3/40	Able to be used for the whole series products	
		3NO+1NC	AX-3/31		
		2NO+2NC	AX-3/22		
		1NO+3NC	AX-3/13		
		4NC	AX-3/04		
		2NO	AX-3/20		
		1NO+1NC	AX-3/11		
		2NC	AX-3/02		
 F5 1N/O+1N/C Air delay head	On-delay time(s)	0.1~3	F5-T0	Able to be used for the whole series products	
		0.1~30	F5-T2		
		10~180	F5-T4		
	Off delay time(s)	0.1~3	F5-D0		
		0.1~30	F5-D2		
		10~180	F5-D4		
 NCF1-11C Secondary side suspension auxiliary contact	Number of auxiliary contacts	1NO+1NC	NCF1-11C	Able to be used for the products of 170A or lower	
	 SR2-A Surge suppressor	Suppression voltage range	AC 24V ~ 48V	SR2-A 24V~48V	Able to be used for the products of 9A~38A or lower
AC 100V~250V			SR2-A 100V ~ 250V		
AC 380V ~ 440V			SR2-A 380V~440V		
 SR2-C Surge suppressor			AC/DC 24V ~ 48V	SR2-C 24V ~ 48V	Able to be used for the products of 40A~95A or lower
			AC/DC 100V~250V	SR2-C 100V ~ 250V	
			AC/DC 380V ~ 440V	SR2-C 380V ~ 440V	

 NR2 Thermal overload relay		NR2-25	9A~32A		
		NR2-36	32A, 38A		
		NR2-93	40A~95A		
		NR2-150	115A~150A		
		NR2-200	115A~170A		
		NR2-630	205A~620A		
 NRE8 Electronic overload relay		NRE8-25	9A~32A		
		NRE8-40	40A		
		NRE8-100	40A~95A		
		NRE8-200	115A~170A		
		NRE8-630	205A~620A		
 NC7-09~95 Mechanical interlock  NC7-115~170 Mechanical interlock  NC7-205~620 Mechanical interlock	9A~95A	Purchase individually	How to purchase the products of 205A or higher	Purchase it individually, and install it by yourself	
	40A~95A	Reversible product without connecting wire		Directly purchase the reversible products (specified current for two contactors to be the same)	
	9A~38A	Reversible product with connecting wire			
	115A 170A~ Purchase individually				
	Over 205A product mechanical interlocking mechanism code	Horizontal installation	NJLs-GG	NC7-205 Combination of two units	
			NJLs-HH	NC7-250~300 Combination of two arbitrary units	
			NJLs-KK	NC7-410~475 Combination of two arbitrary units	
			NJLs-LL	NC7-620 Combination of two units	
		Vertical installation	NJLc-GG	NC7-205 Combination of two units	
			NJLc-GH	NC7-205 and NC7-250~300	
			NJLc-GK	NC7-205 and NC7-410~475	
			NJLc-GL	NC7-205 and NC7-620	
			NJLc-HH	NC7-250~300 Combination of two units	
			NJLc-HK	NC7-250~300 and NC7-410~475	
			NJLc-HL	NC7-250~300 and NC7-620	
			NJLc-KK	NC7-410~475 Combination of two units	
			NJLc-KL	NC7-410~475 and NC7-620	
NJLc-LL			NC7-620 Combination of two units		

5. Main parameters and technical performance

5.1 Main parameters and technical performance criteria for the NC7 product

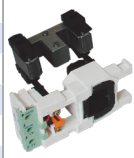
Type			NC7-09	NC7-12	NC7-17	NC7-22	NC7-25	NC7-32	NC7-38	NC7-40	NC7-50	NC7-65	NC7-80	NC7-95										
Rated operational current(A)	380V/400V	AC-3	9	12	18	22	25	32	38	40	50	65	80	95										
		AC-4	3.5	5	7.7	7.7	8.5	12	12	18.5	24	28	37	44										
	660V/690V	AC-3	6.6	8.9	12	14	18	22	22	34	39	42	49	49										
		AC-4	1.5	2	3.8	3.8	4.4	7.5	7.5	9	12	14	17.3	21.3										
Appointed free air heat generation current(A)			20	20	32	32	40	50	50	60	80	80	110	110										
Rated insulation voltage(V)			690	690	690	690	690	690	690	690	690	690	690	690										
Rated impulse withstand voltage(kV)			6	6	6	6	6	6	6	8	8	8	8	8										
Rated making capacity			Making current:10Ie(AC-3)or 12Ie(AC-4)																					
Rated breaking capacity			Making/breaking current:8Ie(AC-3)or 10Ie(AC-4)																					
Short time withstand current(10s)			72	96	144	176	200	256	304	320	400	520	640	760										
Controllable three-phase squirrel-cage motor power(AC-3)kW	380V/400V	4	5.5	7.5	11	11	15	18.5	18.5	22	30	37	45											
	660V/690V	5.5	7.5	10	11	15	18.5	18.5	30	37	37	45	45											
Intermittent-periodic-duty motor power(AC-4)kW	380V/400V	1.5	2.2	3	3	4	5.5	5.5	7.5	11	15	18.5	22											
	600V/690V	1.1	1.5	3.7	3.7	4	5.5	5.5	7.5	11	11	15	18.5											
Frequency of Electrical life operation (times/h)	Mechanical life	AC-3	1200	1200	1200	1200	1200	600	600	600	600	600	600	600										
		AC-4	300	300	300	300	300	300	300	300	300	300	120	120										
			3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600										
Electrical life (ten thousand times)	AC-3	100	100	100	100	100	80	80	80	60	60	60	60											
	AC-4	20	20	20	20	20	20	20	15	15	15	10	10											
Mechanical life(ten thousand times)			1000	1000	1000	1000	1000	800	800	800	800	800	600	600										
Type of the fuse adapted			RT16-20	T16-20	RT16-32	RT16-32	RT16-40	RT16-50	RT16-50	RT16-63	RT16-80	RT16-80	RT16-100	RT16-125										
Piece(of string,etc)			1	2	1	2	1	2	1	2	1	2	1	2	1	2								
Cold-pressed Non-prefabricated-tip cord terminal cord with the prefabricatedtip mm ⁵ Non-prefabricated-tip hard wire			1/2.5	1/2.5	1/2.5	1.5/4	1.5/4	1.5/4	1.5/4	2.5/6	2.5/6	2.5/6	2.5/6	6/25	4/10	6/25	4/10	10/35	6/16	10/35	6/16			
			1/4	1/2.5	1/4	1/2.5	1.5/6	1.5/4	1.5/6	1.5/4	1.5/10	1.5/6	2.5/10	2.5/6	2.5/10	2.5/6	6/25	4/10	6/25	4/10	10/35	6/16	10/35	6/16
			1/4	1/4	1/4	1/4	1.5/6	1.5/6	1.5/6	1.5/6	1.5/6	1.5/6	2.5/10	2.5/10	2.5/10	2.5/10	6/25	4/10	6/25	4/10	10/35	6/16	10/35	6/16
Connection terminal screw size and			M3.5	M3.5	M3.5	M3.5	M4	M4	M4	M8	M8	M8	M10	M10										
tightening torque(N·m)			0.8	0.8	0.8	0.8	1.2	1.2	1.2	4	4	4	6	6										
AC coil power	Attracting(VA)		70	70	70	70	110	110	110	300	300	300	300	300										
	50Hz	Holding(VA)	9	9	9.5	9.5	14	14	19	57	57	57	57	57										
	Power(W)		1.8~2.7	1.8~2.7	3~4	3~4	3~4	3~4	3~4	6~10	6~10	6~10	6~10	6~10										
Action(actuating)range			Pull-in voltage:85%Us~110%Us;Release voltage:20%Us~75%Us																					
Basic parameters of the auxiliary contact			AC-15:0.95A 380V/400V DC-13:0.15A 220V/250V lth:10A																					

5.2 Rated control source voltage Us and code for the NC7 ac contactor of 170A or lower

Coil voltage Us(V)	24	36	42	48	110	127	220	230	240	380	400	415	440	480	500	600	660
50Hz	B5	C5	D5	E5	F5	G5	M5	P5	U5	Q5	V5	N5	R5	T5	S5	X5	Y5
60Hz	B6	C6	D6	E6	F6	G6	M6	P6	U6	Q6	V6	N6	R6	T6	S6	X6	Y6
50/60Hz	B7	C7	D7	E7	F7	G7	M7	P7	U7	Q7	V7	N7	R7	T7	S7	X7	Y7

Type			NC7-115	NC7-150	NC7-170	NC7-205	NC7-250	NC7-300	NC7-410	NC7-475	NC7-620
Rated operational current(A)	380V/400V	AC-3	115	150	170	205	250	300	410	475	620
		AC-4	115	150	150	205	250	300	410	475	620
	660V/690V	AC-3	86	107	118	137	170	235	303	353	462
		AC-4	86	107	107	137	170	235	303	353	462
Appointed free air heat generation current(A)			200	200	275	275	315	380	450	630	800
Rated insulation voltage(V)			1000	1000	1000	1000	1000	1000	1000	1000	1000
Rated impulse withstand voltage(kV)			8	8	8	8	8	8	8	8	8
Rated making capacity			Making current: 10xle(AC-3) or 12xle(AC-4)								
Rated breaking capacity			Making/breaking current: 8xle(AC-3) or 10xle(AC-4)								
Short time withstand current(10s)			920	1200	1360	1640	2000	2400	3280	3800	4960
Controllable three-phase squirrel-cage motor power(AC-3)kW	380V/400V	55	75	90	110	132	160	200	265	335	
	660V/690V	80	100	110	129	160	220	280	335	450	
Intermittent-periodic-duty motor power(AC-4)kW	380V/400V	55	75	90	110	132	160	200	265	335	
	600V/690V	80	100	110	129	160	220	280	335	450	
Frequency of operation (times/h)	Electrical life	AC-3	1200	1200	600	600	600	600	600	600	600
		AC-4	120	120	120	60	60	60	60	60	60
	Mechanical life	1200	1200	600	600	600	600	600	600	600	
Electrical life (ten thousand times)	AC-3	80	80	60	60	60	60	60	60	60	
	AC-4	2	2	1	1	1	1	1	0.6	0.6	
Mechanical life(ten thousand times)			600	600	600	600	600	600	600	600	600
Type of the fuse adapted			NT3-225	NT3-225	NT3-315	RT16-3	RT16-3	RT16-3	RT16-3	RT16-4	RT16-4
AC coil power	50Hz	Attracting(VA) Holding(A) Power(W)	115	150	170						
			660	660	660						
			91.2	91.2	91.2						
			10-15	10-15	10-15						
Action(actuating)range			Pull-in voltage: 85%Us~110%Us; Release voltage: 20%Us~75%Us; NC7-250~620 Release voltage: 10%Us~75%Us								
Basic parameters of the auxiliary contact			AC-15: 0.95A 380V/400V			DC-13: 0.15A 220/250V			lth: 10A		

Type	NC7-115	NC7-150	NC7-170	NC7-205	NC7-250	NC7-300	NC7-410	NC7-475	NC7-620
Piece (of string, etc)	2	2	2	1	1	1	1 (2)	2	2
Cable (mm2)	10~50	10~50	10~50	95~150	120~185	185~240	240 (150)	150~185	185~240
Copper (mm)	-	-	-	-	-	-	30X5	40X5	50X5
Bolt	M10	M10	M10	M10	M10	M10	M10	M10	M12
Tightening torque(N·m)	10	10	10	10	10	10	10	10	14

Coil code	Control voltage(V)	110	127	220	380	Power VA		Schematic drawing
						Start	Hold	
Contactor type								
NC7-205		FG110	FG127	FG220	FG380	966	66	
NC7-250		FI110	FI127	FI220	FI380	1500	18	
NC7-300		FI110	FI127	FI220	FI380	1500	18	
NC7-410		FJ110	FJ127	FJ220	FJ380	1500	20	
NC7-475		FK110	FK127	FK220	FK380	1500	25	
NC7-620		FL110	FL127	FL220	FL380	1700	30	

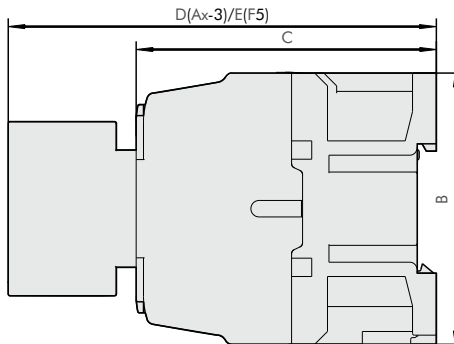
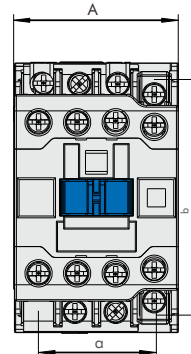
Note: Products of NC7-250 or higher are duplex winding ones.

6. Derivative products

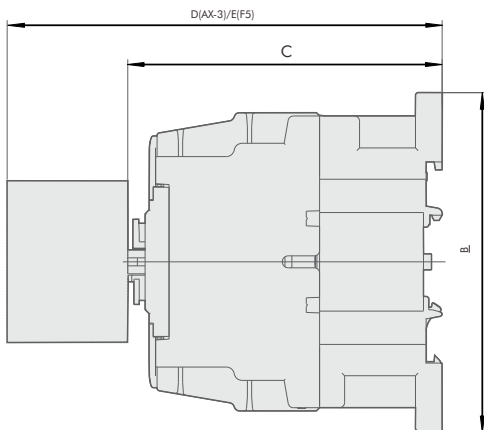
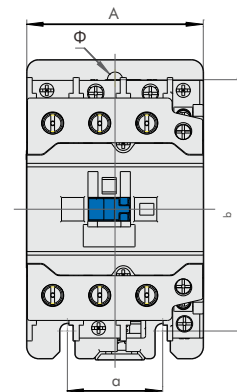
Derivative products	Contactor	Auxiliary module	Schematic drawing
Reversing contactor		<div><div>+</div><div> Mechanical interlocking mechanism</div></div>	
Timing-delay contactor		<div><div>+</div><div> Time-delay block</div></div>	
Star-delta starter		<div><div>+</div><div> Time-delay block</div></div>	
Magnetic starter		<div><div>+</div><div> Thermal relay</div></div>	

7. Overall and mounting dimensions (mm)

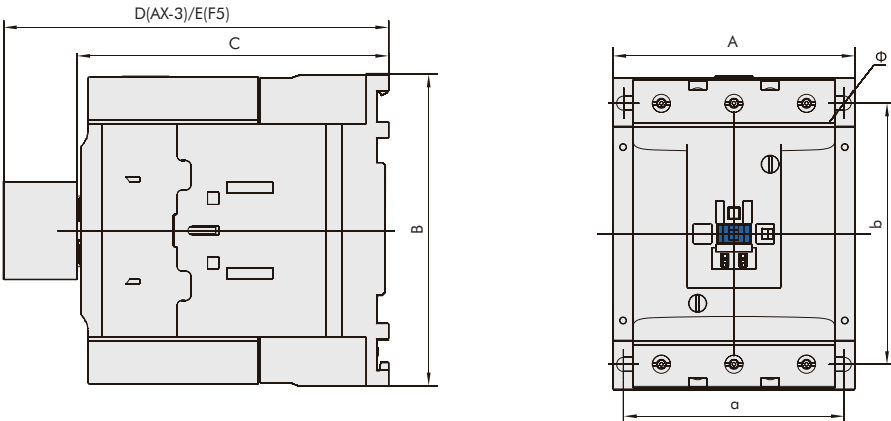
NC7 09~38



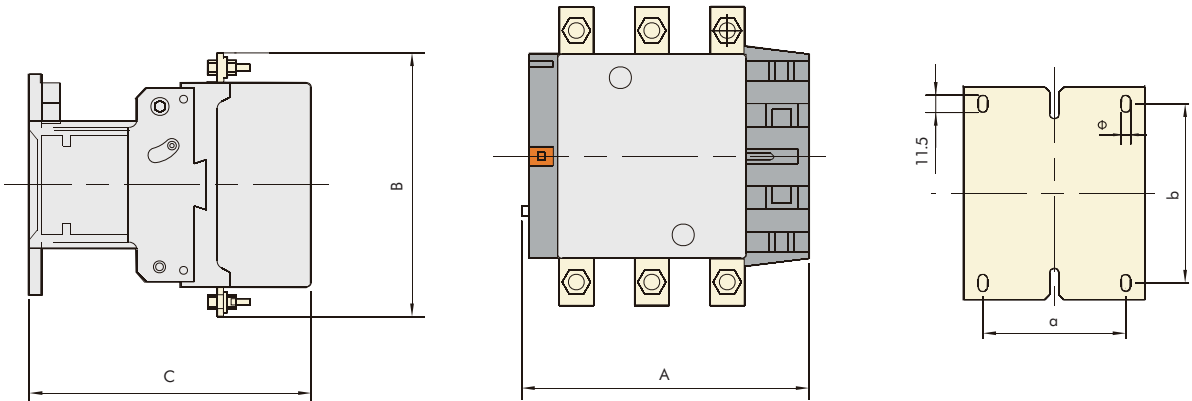
NC7 40~95



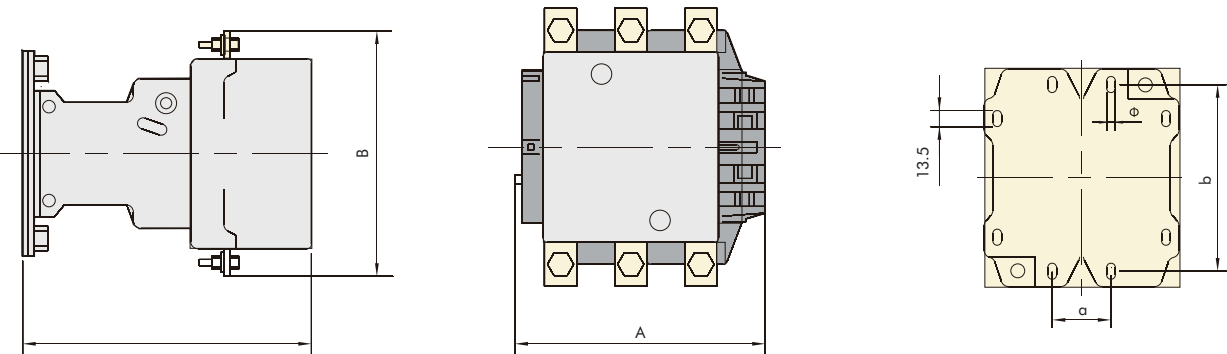
NC7 115~170

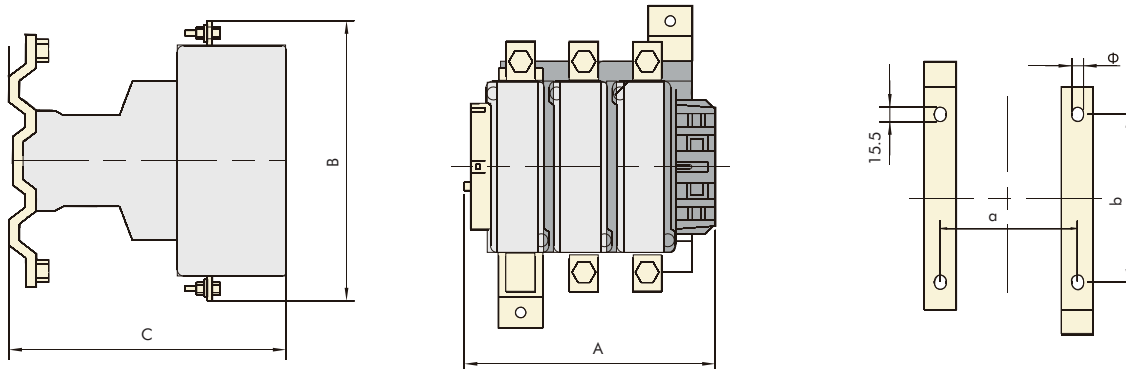


NC7 205~300



NC7 410~475





mm								
Type	Amax	Bmax		Dmax	Emax	a	b	Φ
NC7-0911~1211	45	75	88	124.5	144.5	34/35	50/60/61.8	4.5
NC7-1811~2211	45	75	91	127.5	147.5	34/35	50/60/61.8	4.5
NC7-2511	56	88	100	135.5	155.5	40	50/60/75	4.5
NC7-3211~3811	56	88	105	40.5	160.5	40	50/60/75	4.5
NC7-40~65	77	129	119	157.5	177.5	40.5	107	6.5
NC7-80~95	85	129	128	165.5	185.5 212.5	40.5	107	6.5
NC7-115~170	122	157	158	192.5		96~110	130	7
NC7-205	171	197	186			80	110~120	6.5
NC7-250	202	203	215			96	110~120	6.5
NC7-300	213	206	220			96	110~120	6.5
NC7-410	213	206	220			80	170~180	8.5
NC7-475	233	238	233			80	170~180	8.5
NC7-620	309	304	256			180	180~190	10.5

8. Ordering information

The following to be indicated when ordering:

8.1 Full name and type of the contactor

8.2 Rated control source voltage and frequency or size code of the coil

8.3 If you need to order the AX-3 auxiliary contactor block, F5 air delay head or standard rail track for the product, you should further give a clear indication; For products of 205A or higher, the auxiliary contactor blocks will not be attached for lack of indication such as the number of those blocks and how they are combined.

8.4 When the NC7 115A-170A products leave the factory, the body is not provided with the dust cap. It is hoped users will further give a clear indication when they need it.

8.5 Amount on order

8.6 The 38A-or-lower derivative N conventional products triple poles are provided in the mode of reversible wiring, so you must give clear indication for your special wiring mode.

8.7 The 205A-or-higher derivative NS conventional products triple poles are provided in the mode of reversible wiring, so you must give clear indication for your special wiring mode.

8.8 Order Sample:

10 units of NC7-0911 ac contacts, coil voltage 220V/50Hz, with 5 pieces of AX-3/22

10 units of NC7-300 ac contacts, coil voltage 220V/50Hz, with 10 pieces of AX-3/22 further attached

Mechanical interlocking mechanism to be order	Writing format for ordering
NC7-205 combined with NC7-620 Aertical installation, Mechanical interlocking mechanism, 30 sets	NJLc-GL 30 sets
Two NC7-250 combination in a mode of Horizontal installation, Mechanical interlocking mechanism, 30 sets	NJLc-HH 30 sets