

NC8 Series

Current range: 6~500A

(6A, 9A, 12A, 18A, 25A, 32A, 38A, 40A, 50A, 65A, 80A, 100A, 115A, 150A, 170A, 205A, 265A, 300A, 400A, 500A)

Poles: 3P, 4P

3-pole contactor



Frame size (A)	6, 9, 12	9, 12, 18	25, 32, 38	40, 50, 65
	Mini type	Normal type		
Power (kW,400V)	2.2, 4, 5.5	4, 5.5, 7.5	11, 15, 18.5	18.5, 22, 30

4-pole contactor





80, 100

115, 150, 170

205, 265, 300

400, 500

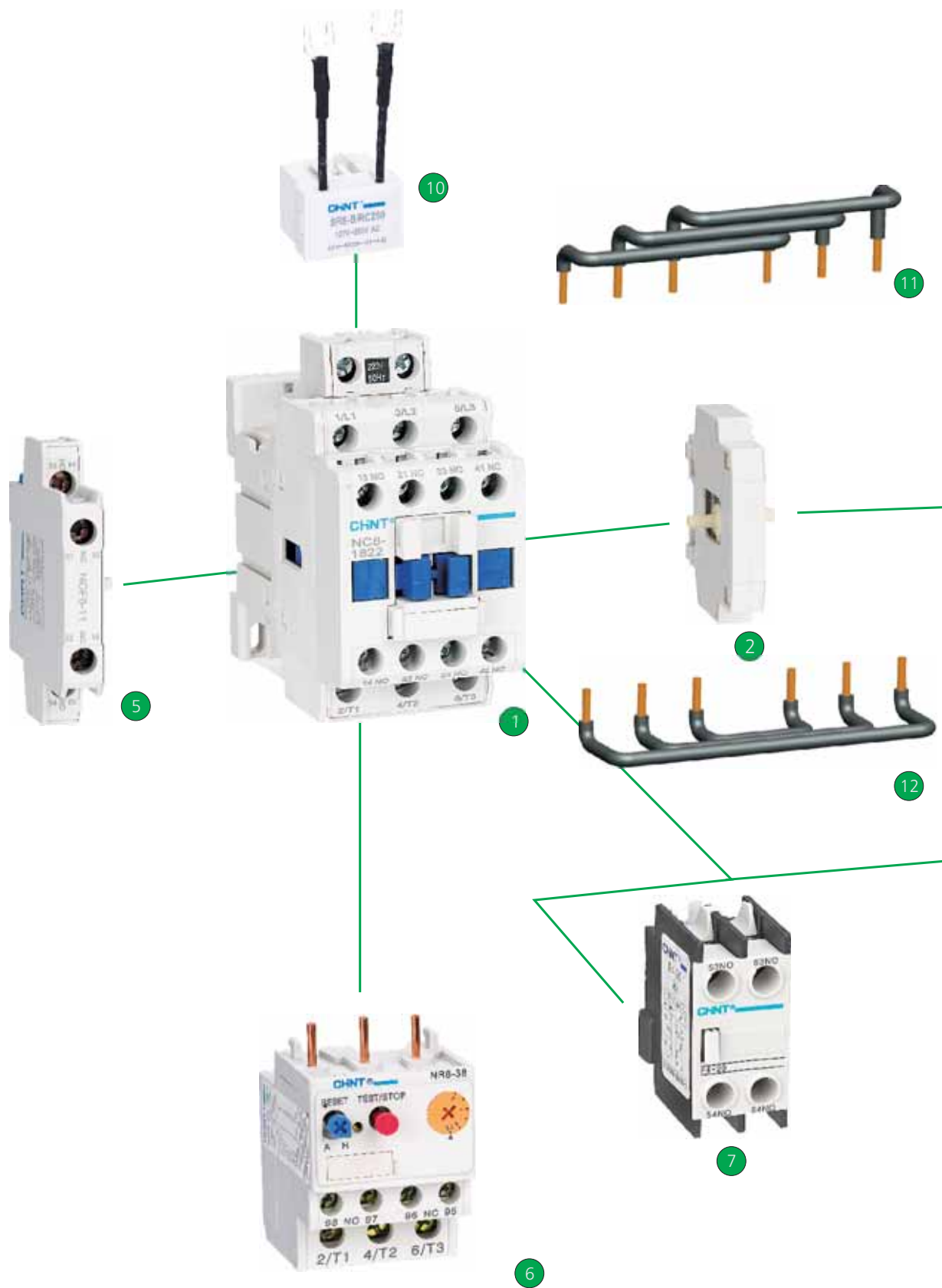
37, 45

55, 75, 90

110, 132, 160

200, 250





NC8 and Accessories

- 1 Contactor
- 2 Mechanical interlock block
- 3 Contactor
- 4 Side mount aux
- 5 Side mount aux
- 6 Thermal overload relay
- 7 Front mount aux
- 8 Front mount aux
- 9 Pneumatic timers
- 10 Surge arrester block
- 11 Bus bar
- 12 Bus bar



3



4



8



9



NC8 Series AC Contactor 06~500A

1. General

NC8 series AC contactor is applied to circuits with AC current frequency of 50 Hz or 60 Hz, rated operational voltage up to 690 V and rated operational current up to 500 A. It is used for remote making & breaking circuits, and can also be used with proper thermal overload relay together as an electromagnetic starter to protect circuits from overload.

Standard: IEC/EN 60947-4-1.

2. Operating conditions

- 2.1 Certificates: CE, KEMA, UL;
- 2.2 Electric ratings: AC 50/60Hz, up to 690V, up to 500A;
- 2.3 Application: remotely makes and breaks circuit; protect circuit from overload assembling with proper thermal relay;
- 2.4 Utilization category: AC-1, AC-3, AC-4;
- 2.5 Mounting conditions: inclination between mounting plane and vertical plane not exceed $\pm 5^\circ$

3. Type designation

3-pole contactor

NC8 - 06 M 01 /Z /N

Combination

/ N: Reversing
None: Without additional device

Coil type

/ Z: DC operation coil
None: AC operation coil

Auxiliary contact

Mini type (6A~12A): 01: 1NC; 10: 1NO
Normal type (9A~38A): None: 1NO+1NC; 22: 2NO+2NC
Normal type (40A~100A): None: 1NO+1NC;
Normal type (115A~500A): None: None

Contactor type

M: Mini type (6A~12A)
None: Normal type(9A~500A)

Nominal rating

06: 6A; 09: 9A; ... 500: 500A

NC8 series AC contactor

4-pole contactors

NC8 - 06 M /4 /Z /N

Combination

/ N: Reversing
None: Without additional device

Coil type

/ Z: DC operation coil
None: AC operation coil

Number of main contact

Mini type (6A~12A)
/ 4: 4NO; / 22: 2NO+2NC
Normal type (9A~38A)
/ 4: 4NO; /22: 2NO+2NC
Normal type (40A~100A)
/4: 4NO

Contactor type

M: Mini type (6A~12A)
None: Normal type(9A~100A)

Nominal rating

06: 6A; 09: 9A; ... 100: 100A

NC8 series AC contactor

Accessories

F4 - 20

Contacts

- 20: 2NO
- 11: 1NO+1NC
- 02: 2NC
- 40: 4NO
- 31: 3NO+1NC
- 22: 2NO+2NC
- 13: 1NO+3NC
- 04: 4NC

Auxiliary contact

F5 - T 0

Time-delay range

- 0: 0.1s~3s
- 2: 0.1s~30s
- 4: 10s~180s

Time-delay type

- T: Making time-delay
- D: Breaking time-delay

Auxiliary contact

F8 - 20

Contacts

- 20: 2NO
- 11: 1NO+1NC
- 02: 2NC
- 40: 4NO
- 31: 3NO+1NC
- 22: 2NO+2NC
- 13: 1NO+3NC
- 04: 4NC

Auxiliary contact

NCF8 - 11 (for NC8 - 09~100)

Contacts

- 11: 1NO+1NC

Side auxiliary contact

NCF1 - 11C / B

None: Normal type : for 115A~170A
 /B: for 205A~500A

Contacts

- 11: 1NO+1NC

Side auxiliary contact

SR8 - A / RV 48

Voltage protection scope

- 48: 24V~48V AC/DC
- 250: 110V~250V AC/DC (for RV type)
 127V~250V AC (for RC type)
- 440: 380V~440V AC

Type of element

- RV: Varistor
- RC: Resistance + Capacitance

Matching contactor

- A: for mini type
- B: for normal 9A~38A
- C: for normal 40A~100A

Surge Arrester

Quick selection table

Frame size	9A	12A	18A	25A	32A	38A
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3-pole contactors



Auxiliary contacts	1NO+1NC	NC8-09	NC8-12	NC8-18	NC8-25	NC8-32	NC8-38
	2NO+2NC	NC8-0922	NC8-1222	NC8-1822	NC8-2522	NC8-3222	NC8-3822

Ratings/IEC/EN 60947-4-1		kW	A	kW	A	kW	A	kW	A	kW	A	kW	A
AC-1			25		25		32		40		50		50
	220V/230V/240V	2.2	9	3	12	4	18	5.5	25	7.5	32	9	38
AC-3	380V/400V	4	9	5.5	12	7.5	18	11	25	15	32	18.5	38
	415V	4	9	5.5	12	9	18	11	25	15	32	18.5	38
	660V/690V	5.5	6.7	7.5	9	9	10.6	15	17.3	18.5	21.9	18.5	21.9

Ratings/UL508		hp	A	hp	A	hp	A	hp	A	hp	A	hp	A
Continuous current (FLA)			25		25		32		40		50		50
Single phase	110V/120V	0.5		0.75		1		1.5		2		2	
	230V/240V	1		2		3		3		5		5	
Three phases	200V/208V	3		3		5		7.5		10		10	
	230V/240V	3		3		5		7.5		10		10	
	460V/480V	5		7.5		10		15		20		20	
	575V/600V	7.5		10		15		20		25		25	

Frame size	40A	50A	65A	80A	100A	115A	150A	170A
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3-pole contactors



Auxiliary contacts	1NO+1NC	NC8-40	NC8-50	NC8-65	NC8-80	NC8-100	NC8-115	NC8-150	NC8-170
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Ratings/IEC/EN 60947-4-1		kW	A	kW	A	kW	A	kW	A	kW	A	kW	A	kW	A	kW	A
AC-1			60		80		80		125		125		200		200		275
AC-3	220V/230V/240V	11	40	15	50	18.5	65	22	80	25	100	37	115	45	150	55	170
	380V/400V	18.5	40	22	50	30	65	37	80	45	100	55	115	75	150	90	170
	415V	22	40	25	50	37	65	45	80	45	100	59	115	80	150	100	170
	660V/690V	30	34	33	39	37	42	45	49	45	49	80	86	100	107	110	118

Ratings/UL508		hp	A	hp	A	hp	A	hp	A	hp	A	hp	A	hp	A	hp	A
Continuous current (FLA)			60		80		80		125		125		200		200		275
Single phase	110V/120V	3		5		5		7.5		10		10		15		15	
	230V/240V	5		7.5		10		20		20		25		30		30	
Three phases	200V/208V	10		15		20		30		30		40		50		60	
	230V/240V	10		15		20		30		30		40		60		60	
	460V/480V	30		40		50		60		60		100		125		150	
	575V/600V	30		40		50		60		60		100		125		150	

Frame size	205A	265A	300A	400A	500A
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3-pole contactors



Auxiliary contacts	2NO+2NC	NC8-205	NC8-265	NC8-300	NC8-400	NC8-500
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Ratings/IEC/EN 60947-4-4		kW	A	kW	A	kW	A	kW	A	kW	A
AC-1			300		330		380		450		630
AC-3	220V/230V/240V	63	205	75	265	90	300	132	400	160	500
	380V/400V	110	205	132	265	160	300	200	400	250	500
	415V	110	205	140	265	160	300	220	400	280	500
	660V/690V	132	137	160	185	200	235	300	303	355	354

Ratings/UL508		hp	A	hp	A	hp	A	hp	A	hp	A
Continuous current (FLA)			300		330		380		450		630
Single phase	110V/120V	15		20		25		30		40	
	230V/240V	30		40		50		60		75	
Three phases	200V/208V	60		75		100		125		150	
	230V/240V	75		100		125		150		200	
	460V/480V	150		200		250		300		400	
	575V/600V	200		250		300		400		500	

Frame size	9A	12A	18A	25A	32A	38A
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4-pole Contactors



Main contacts	4NO	NC8-09/4	NC8-12/4	NC8-18/4	NC8-25/4	NC8-32/4	NC8-38/4
	2NO+2NC	NC8-09/22	NC8-12/22	NC8-18/22	NC8-25/22	NC8-32/22	NC8-38/22

Ratings/IEC/EN 60947-4-1		kW	A	kW	A	kW	A	kW	A	kW	A	kW	A
AC-1			25		25		32		40		50		50
	220V/230V/240V	2.2	9	3	12	4	18	5.5	25	7.5	32	9	38
AC-3	380V/400V	4	9	5.5	12	7.5	18	11	25	15	32	18.5	38
	415V	4	9	5.5	12	9	18	11	25	15	32	18.5	38
	660V/690V	5.5	6.7	7.5	9	9	10.6	15	17.3	18.5	21.9	18.5	21.9

Ratings/UL508		hp	A	hp	A	hp	A	hp	A	hp	A	hp	A
Continuous current (FLA)			25		25		32		40		50		50
Single phase	110V/120V	0.5		0.75		1		1.5		2		2	
	230V/240V	1		2		3		3		5		5	
Three phases	200V/208V	3		3		5		7.5		10		10	
	230V/240V	3		3		5		7.5		10		10	
	460V/480V	5		7.5		10		15		20		20	
	575V/600V	7.5		10		15		20		25		25	

Frame size	40A	50A	65A	80A	100A
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4-pole Contactors












Main contacts	4NO	NC8-40/4	NC8-50/4	NC8-65/4	NC8-80/4	NC8-100/4
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Ratings/IEC/EN 60947-4-1		kW	A	kW	A	kW	A	kW	A	kW	A
AC-1			60		80		80		125		125
AC-3	220V/230V/240V	11	40	15	50	18.5	65	22	80	25	100
	380V/400V	18.5	40	22	50	30	65	37	80	45	100
	415V	22	40	25	50	37	65	45	80	45	100
	660V/690V	30	34	33	39	37	42	45	49	45	49




Ratings/UL508		hp	A	hp	A	hp	A	hp	A	hp	A
Continuous current (FLA)			60		80		80		125		125
Single phase	110V/120V	3		5		5		7.5		10	
	230V/240V	5		7.5		10		20		20	
Three phases	200V/208V	10		15		20		30		30	
	230V/240V	10		15		20		30		30	
	460V/480V	30		40		50		60		60	
	575V/600V	30		40		50		60		60	

Frame size	9A	12A	18A	25A	32A	38A																
<p>Contactors</p>  <p>3-pole</p>  <p>4-pole</p>  <p>3-pole</p>  <p>4-pole</p>																						
<p>Auxiliary contact block</p>  <p>F4 4-pole Front mount</p>  <p>F4 2-pole Front mount</p>  <p>F5 1N/O+1N/C Pneumatic timer</p>  <p>NCF8 2-pole Side mount</p>	<p>Contacts aux</p>		4NO	F4-40																		
			3NO+1NC	F4-31																		
			2NO+2NC	F4-22																		
			1NO+3NC	F4-13																		
			4NC	F4-04																		
			2NO	F4-20																		
			1NO+1NC	F4-11																		
	2NC	F4-02																				
	<p>Making time-delay range (s)</p>		0.1~3	F5-T0																		
			0.1~30	F5-T2																		
10~180			F5-T4																			
<p>Breaking time-delay range (s)</p>		0.1~3	F5-D0																			
		0.1~30	F5-D2																			
		10~180	F5-D4																			
<p>Contacts aux</p>		1NO+1NC	NCF8-11																			
<p>Surge arrester</p>  <p>SR8-B/RC250 Surge arrester</p>	<p>Voltage protection scope</p>		48	24V~48V AC/DC																		
			250	110V~250V AC/DC (for RV type) 127V~250V AC (for RC type)																		
			440	380V~440V AC																		
<p>Overload relays</p>  <p>NR8-38 Bimetallic style Overload relay</p>	<p>NR8-38</p> <p>Rated current (A)</p> <table border="1"> <tr> <td>0.1~0.16</td> <td>4~6</td> </tr> <tr> <td>0.16~0.25</td> <td>5.5~8</td> </tr> <tr> <td>0.25~0.4</td> <td>7~10</td> </tr> <tr> <td>0.4~0.63</td> <td>9~13</td> </tr> <tr> <td>0.63~1</td> <td>12~18</td> </tr> <tr> <td>1~1.6</td> <td>16~24</td> </tr> <tr> <td>1.6~2.5</td> <td>23~32</td> </tr> <tr> <td>2.5~4</td> <td>30~38</td> </tr> </table>						0.1~0.16	4~6	0.16~0.25	5.5~8	0.25~0.4	7~10	0.4~0.63	9~13	0.63~1	12~18	1~1.6	16~24	1.6~2.5	23~32	2.5~4	30~38
	0.1~0.16	4~6																				
	0.16~0.25	5.5~8																				
	0.25~0.4	7~10																				
	0.4~0.63	9~13																				
	0.63~1	12~18																				
	1~1.6	16~24																				
	1.6~2.5	23~32																				
	2.5~4	30~38																				

Frame size	40A	50A	65A	80A	100A
Contactors					
	3-pole	4-pole	3-pole	4-pole	
Auxiliary contact block	 F4 4-pole Front mount	Contacts aux	4NO	F4-40	
	 F4 2-pole Front mount		3NO+1NC	F4-31	
2NO+2NC			F4-22		
1NO+3NC			F4-13		
4NC			F4-04		
2NO			F4-20		
1NO+1NC			F4-11		
	2NC		F4-02		
 F5 1N/O+1N/C Pneumatic timer	Making time-delay range (s)	0.1~3	F5-T0		
		0.1~30	F5-T2		
		10~180	F5-T4		
	Breaking time-delay range (s)	0.1~3	F5-D0		
		0.1~30	F5-D2		
		10~180	F5-D4		
 NCF8 2-pole Side mount	Contacts aux	1NO+1NC	NCF8-11		
Surge arrester	 SR8-C/RC440 Surge arrester	Voltage protection scope	48	24V~48V AC/DC	
			250	110V~250V AC/DC (for RV type) 127V~250V AC (for RC type)	
			440	380V~440V AC	

Frame size	115A	150A	170A	205A	265A	300A	400A	500A
Contactors								
	3-pole		3-pole		3-pole			
Auxiliary contact block	 F4 4-pole Front mount		Contacts aux		4NO		F4-40	
	 F4 2-pole Front mount				3NO+1NC		F4-31	
					2NO+2NC		F4-22	
					1NO+3NC		F4-13	
					4NC		F4-04	
					2NO		F4-20	
					1NO+1NC		F4-11	
					2NC		F4-02	
					Making time-delay range (s)		0.1~3	
							F5-T0	
							0.1~30	
							F5-T2	
							10~180	
							F5-T4	
					Breaking time-delay range (s)		0.1~3	
							F5-D0	
							0.1~30	
							F5-D2	
							10~180	
							F5-D4	
	 NCF1 2-pole Side mount		1NO+1NC		NCF1-11C		 NCF1 2-pole Side mount	
							1NO+1NC	
							NCF1-11C/B	
Surge arrester	/							

Frame size	40A	50A	65A	80A	100A	115A	150A	170A
Contactors								
	3-pole	4-pole	3-pole	4-pole	3-pole			
Overload relays	 NR2-93 Bimetallic style Overload relay				NR2-93		NR2-200	
					Rated current (A)		Rated current (A)	
					23~32		100~160	
					30~40		125~200	
					37~50			
					48~65			
					55~70			
					63~80			
					80~93			
	 NRE8-100 Electronic style Overload relay				NRE8-100			
					Rated current (A)			
					65			
					100			

Frame size	205A	265A	300A	400A	500A					
Contactors										
	3-pole	3-pole								
Overload relays	 NR2-630 Bimetallic style Overload relay					NR2-630				
						Rated current (A)				
	160~250									
	200~315									
	250~400									
	315~500									
	400~630									

Frame size	6A	9A	12A	6A	9A	12A
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Contactors

AC coil



DC coil



3-pole	Auxiliary contacts	1NO	NC8-06M10	NC8-09M10	NC8-12M10	NC8-06M10/Z	NC8-09M10/Z	NC8-12M10/Z
		1NC	NC8-06M01	NC8-09M01	NC8-12M01	NC8-06M01/Z	NC8-09M01/Z	NC8-12M01/Z
4-pole	Main contacts	4NO	NC8-06M/4	NC8-09M/4	NC8-12M/4	NC8-06M/4/Z	NC8-09M/4/Z	NC8-12M/4/Z
		2NO+2NC	NC8-06M/22	NC8-09M/22	NC8-12M/22	NC8-06M/22/Z	NC8-09M/22/Z	NC8-12M/22/Z

Ratings/IEC/EN 60947-4-1		kW	A	kW	A	kW	A	kW	A	kW	A	kW	A
AC-1			20		20		20		20		20		20
AC-3	220V/230V/240V	1.5	6	2.2	9	3	12	1.5	6	2.2	9	3	12
	380V/400V	2.2	6	4	9	5.5	12	2.2	6	4	9	5.5	12
	415V	2.2	6	4	9	5.5	12	2.2	6	4	9	5.5	12
	660V/690V	3	3.8	4	4.9	4	4.9	3	3.8	4	4.9	4	4.9

Ratings/UL508		hp	A	hp	A	hp	A	hp	A	hp	A	hp	A
Continuous current			20		20		20		20		20		20
Single phase	110V/120V	0.3		0.5		0.75		0.3		0.5		0.75	
	230V/240V	0.75		1.5		2		0.75		1.5		2	
Three phases	200V/208V	1.5		3		3		1.5		3		3	
	230V/240V	1.5		3		3		1.5		3		3	
	460V/480V	3		5		7.5		3		5		7.5	
	575V/600V	3		5		10		3		5		10	

Frame size	6A	9A	12A	6A	9A	12A
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Contactors

AC coil



DC coil



Auxiliary contact block



F8
Front mount

contacts number

4NO	F8-40
3NO+1NC	F8-31
2NO+2NC	F8-22
1NO+3NC	F8-13
4NC	F8-04
2NO	F8-20
1NO+1NC	F8-11
2NC	F8-02

Surge arrester



SR8-A
Surge arrester

Voltage protection scope

48	24V~48V AC/DC
250	110V~250V AC/DC (for RV type) 127V~250V AC (for RC type)
440	380V~440V AC

Overload relays



NR8-11.5
Bimetallic style
Overload relay

NR8-11.5

Rated current (A)

0.1~0.16	1.6~2.5
0.16~0.25	2.5~4
0.25~0.4	4~6
0.4~0.63	5.5~8
0.63~1	7~10
1~1.6	9~13

4. Technical data

4.1 Working environment and technical index

Overvoltage category	III		
Pollution degree	3		
Standard	IEC/EN 60947-4-1		
Certificate	CE, UL, KEMA		
Protection degree	IP20(NC8-06M~65)	IP10(NC8-80~170)	IP00(NC8-205~500)
Ambient air temperature	being working	-5°C~+40°C, the average temperature during 24 hours should not exceed +35°C. More information refer to table 1	
	transportation or storage	-25°C~+55°C, or up to +70°C for a short time (in 24 hours)	
Altitude(m)	no exceeding 2000m, more information refer to table 2		
Atmosphere conditions	At mounting side, relative humidity no exceeding 50%, at the max temperature of +40°C. Higher relative humidity is allowable under lower temperature. For example, RH could be +20°C, special measure should be taken to occurrence of dews.		
Installation conditions	the inclination between installation plane and vertical plane is within $\pm 5^\circ$		
Impact and shake	the product should be used in the places where there are no obvious impact and shake		

Table 1

Altitude(m)	2000	3000	4000
Rated impulse withstand voltage	1	0.88	0.78
Correction coefficient			
Rated operational current			
Correction coefficient	1	0.92	0.9

Table 2

environment temperature(°C)	40	50	60	70
correction coefficient	1	0.875	0.75	0.625

4.2 Main circuit parameter and technic capability

Frame size		6A	9A	12A	9A	12A	18A			
		Mini type			Normal type					
Rated conventional heating current(A)		20	20	20	25	25	32			
Rated insulation voltage(V)		690								
Rated impulse withstand voltage(kV)		6								
Rated making capability		making current: 10×Ie(AC-3) or 12×Ie(AC-4)								
Rated breaking capability		making-breaking current: 8×Ie(AC-3) or 10×Ie(AC-4)								
Short-time withstand current(A)		10s	48	72	96	72	96	144		
Rated operational current (A)	220V/230V/240V	AC-3	6	9	12	9	12	18		
		AC-4								
	380V/400V	AC-3	6	9	12	9	12	18		
		AC-4			9					
	415V	AC-3	6	9	12	9	12	18		
		AC-4			9					
	660V/690V	AC-3	3.8	4.9	4.9	6.7	9	10.6		
		AC-4	3.8	4.9	4.9	6.7	9	9		
Rated control power	AC-3(kW)	220V/230V/240V	1.5	2.2	3	2.2	3	4		
		380V/400V	2.2	4	5.5	4	5.5	7.5		
		415V	2.2	4	5.5	4	5.5	9		
		660V/690V	3	4	4	5.5	7.5	9		
	1PH(HP)	110V/120V	0.3	0.5	0.75	0.5	0.75	1		
		230V/240V	0.75	1.5	2	1	2	3		
	3PH(HP)	200V/208V	1.5	3	3	3	3	5		
		230V/240V	1.5	3	3	3	3	5		
		460V/480V	3	5	7.5	5	7.5	10		
		575V/600V	3	5	10	7.5	10	15		
Operating frequency(415V)	AC-3	1,200 operations/h								
	AC-4	300 operations/h								
Electrical life(415V)	AC-3	1,200,000 Operations								
	AC-4	to see Electrical life curves, page 23								
Mechanical life		10,000,000 Operations								
Configuration of main contacts		3-pole:3NO; 4-pole:4NO or 2NO+2NC								
Matched fuse type		RT16-20	RT16-20	RT16-20	RT16-20	RT16-25	RT16-32			
Matched thermal over-load relay	Modle	NR8-11.5			NR8-38					
	current range	0.1~0.16	0.63~1	2.5~4	9~13	0.1~0.16	0.63~1	2.5~4	9~13	30~38
		0.16~0.25	1~1.6	4~6		0.16~0.25	1~1.6	4~6	12~18	
		0.25~0.4	1.6~2.5	5.5~8		0.25~0.4	1.6~2.5	5.5~8	16~24	
		0.4~0.63		7~10		0.4~0.63		7~10	23~32	

25A	32A	38A	40A	50A	65A	80A	100A	115A	150A	170A
Normal type										
40	50	50	60	80	80	125	125	200	200	275
690										
6		8								
making current: $10 \times I_e(\text{AC-3})$ or $12 \times I_e(\text{AC-4})$										
making-breaking current: $8 \times I_e(\text{AC-3})$ or $10 \times I_e(\text{AC-4})$										
200	256	304	320	400	520	640	800	920	1200	1360
25	32	38	40	50	65	80	100	115	150	170
25	32	38	40	50	65	80	100	115	150	170
		32								150
25	32	38	40	50	65	80	100	115	150	170
		32								150
17.3	21.9	21.9	34	39	42	49	49	86	107	118
14	17.3	17.3	34	39	42	49	49			107
5.5	7.5	9	11	15	18.5	22	25	37	45	55
11	15	18.5	18.5	22	30	37	45	55	75	90
11	15	18.5	22	25	37	45	45	59	80	100
15	18.5	18.5	30	33	37	45	45	80	100	110
1.5	2	2	3	5	5	7.5	10	10	15	15
3	5	5	5	7.5	10	20	20	25	30	30
7.5	10	10	10	15	20	30	30	40	50	60
7.5	10	0	10	15	20	30	30	40	60	60
15	20	20	30	40	50	60	60	100	125	150
20	25	25	30	40	50	60	60	100	125	150
1,200 operations/h										
300 operations/h			120 operations/h							
1,200,000 Operations										
to see Electrical life curves, page 23										
10,000,000 Operations							6,000,000 Operations			
			3-pole: 3NO; 4-pole: 4NO				3-pole: 3NO			
RT16-50	RT16-63	RT16-63	RT16-63	RT16-80	RT16-80	RT16-100	RT16-125	NT2-224	NT2-224	NT3-315
NR8-38			NR2-93		NRE8-100			NR2-200		
0.1~0.16	0.63~1	2.5~4	9~13	23~32	55~70	65		100~160		
0.16~0.25	1~1.6	4~6	12~18	30~40	63~80	100		125~200		
0.25~0.4	1.6~2.5	5.5~8	16~24	37~50	80~93					
0.4~0.63		7~10	23~32	48~65						
			30~38							

Frame size		205A	265A	300A	400A	500A	
Normal type							
Rated conventional heating current(A)		300	330	380	450	630	
Rated insulation voltage(V)		1000					
Rated impulse withstand voltage(kV)		8					
Rated making capability		making current: 10×Ie(AC-3) or 12×Ie(AC-4)					
Rated breaking capability		making-breaking current: 8×Ie(AC-3) or 10×Ie(AC-4)					
Short-time withstand current(A)	10s	1640	2120	2400	3200	4000	
Rated operational current (A)	220V/230V/240V	AC-3	205	265	300	400	500
		AC-4	205	265	300	400	500
	380V/400V	AC-3	205	265	300	400	500
		AC-4	205	265	300	400	500
	415V	AC-3	205	265	300	400	500
		AC-4	205	265	300	400	500
	660V/690V	AC-3	137	185	235	303	354
		AC-4	137	185	235	303	354
Rated control power	AC-3(kW)	220V/230V/240V	63	75	90	132	160
		380V/400V	110	132	160	200	250
		415V	110	140	160	220	280
		660V/690V	132	160	200	300	355
	1PH(HP)	110V/120V	15	20	25	30	40
		230V/240V	30	40	50	60	75
	3PH(HP)	200V/208V	60	75	100	125	150
		230V/240V	75	100	125	150	200
		460V/480V	150	200	250	300	400
		575V/600V	200	250	300	400	500
Operating frequency(415V)	AC-3	600 operations/h			300 operations/h		
	AC-4	30 operations/h					
Electrical life(415V)	AC-3	100 Operations			80 Operations		
	AC-4	to see Electrical life curves, page 23					
Mechanical life		6,000,000 Operations					
Configuration of main contacts		3-pole:3NO					
Matched fuse type		RT16(36)-315	RT16(36)-400	RT16(36)-425	RT16(36)-500	RT16(36)-800	
Matched thermal over-load relay	Modle	NR2-630					
	current range	160~250					
		200~315					
		250~400					
		315~500					
400~630							

4.3 The connection capability of main control circuit

Connection circuit	frame size		6A	9A	12A	9A	12A	18A	25A	32A	38A	40A	50A	65A	80A	100A
			Mini type			Normal type										
Main circuit connection	cable connection (mm ²)	flexible cable (with cold-press terminal)	single cable	1~2.5		1~4		1.5~6		2.5~10		10~25		16~50		
			duad cable	1~1.5		1~2.5		1~4		2.5~6		4~16		10~35		
		stiff cable	single cable	1~2.5		1~4		1.5~4		2.5~10		-		-		
			duad cable	1~2.5		1~4		1.5~4		2.5~10		-		-		
	screw size			M3		M3.5		M4		M8						
	tightening torque			(N.m) (lb.in.)	0.8 7		1.2 7		2 10		6 45					
Control circuit connection	cable connection (mm ²)	flexible cable (with cold-press terminal)	single cable	1~2.5						1~4						
			duad cable	1~1.5					1~2.5							
		stiff cable	single cable	1~2.5					1~4							
			duad cable	1~2.5					1~4							
	screw size			M3		M3.5										
	tightening torque			(N.m) (lb.in.)	0.8 7		1.2 7									

Connection circuit	frame size		115A	150A	170A	205A	265A	300A	400A	500A
			Normal type							
Main circuit connection	cable connection (mm ²)	flexible cable (with cold-press terminal)	single cable	10~95					-	
			duad cable	10~50					-	
		stiff cable	single cable	10~95					50~240	
			duad cable	10~50					50~240	
	screw size			M10				M10		
	tightening torque			(N.m) (lb.in.)	10			14 124		
Control circuit connection	cable connection (mm ²)	flexible cable (with cold-press terminal)	single cable					1~4		
			duad cable					1~2.5		
		stiff cable	single cable					1~4		
			duad cable					1~4		
	screw size			M3.5						
	tightening torque			(N.m) (lb.in.)	1.2 7					

4.4 The characteristic of AC control circuit

Connection circuit	frame size	6A	9A	12A	9A	12A	18A	25A	32A	38A	40A	50A	65A	80A	100A	
		Mini type			Normal type											
Coil voltage(V)	50Hz AC 50Hz/60Hz 60Hz	24, 36, 48, 110, 127, 220, 230, 240, 380, 400, 415														
	DC	12, 24, 48, 110, 125, 220, 250														
Acting range	attraction(hot)	(85%~110%)Us; +40°C														
	release(cold)	AC: (20%~75%)Us, DC: (10%~75%)Us; -5°C														
The average power of AC coil(VA)	start	25~40			50~70						160~210			190~250		
	holding	2~7			6~10						13~25			17~30		
Heat wastage(W)	AC	1~4			2~4						4~7			5~8		
Main contact action time(ms)	close	10~18			12~25						15~25			15~30		
	disconnection	4~16			5~20						6~15			8~17		

Connection circuit	frame size	115A	150A	170A	205A	265A	300A	400A	500A	
		Normal type								
Coil voltage(V)	AC	AC/DC				AC/DC				
	DC	110,127,220,380				110~127, 220~240, 380~415				
Acting range	attraction(hot)	(85%~110%)Us; +40°C								
	release(cold)	(10%~75%)Us; -5°C								
The average power of AC coil(VA)	start	600~700			300~600			500~800		
	holding	3~5			5~7			4~8		
Heat wastage(W)	AC	2~4			3~6			3~7		
	DC	2~4			3~6			3~7		
Main contact action time(ms)	close	15~30			30~95			45~100		
	disconnection	40~50			40~80			60~100		

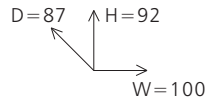
4.5 Main technical data of accessories

F4, front mount	matched contactor	model of accessories		F4-20	F4-11	F4-02	F4-40	F4-31	F4-22	F4-13	F4-04	
		NC8-09~500	contacts	N/O	2	1	0	4	3	2	1	0
			N/C	0	1	2	0	1	2	3	4	
F8, front mount	matched contactor	model of accessories		F8-20	F8-11	F8-02	F8-40	F8-31	F8-22	F8-13	F8-04	
		NC8-06M~12M	contacts	N/O	2	1	0	4	3	2	1	0
			N/C	0	1	2	0	1	2	3	4	
NCF8, side mount	matched contactor	model of accessories		NCF8-11								
		NC8-09~100	contacts	N/O	1							
			N/C	1								
NCF1, side mount	matched contactor	model of accessories		NCF1-11C or NCF1-11C/B								
		NC8-115~500	contacts	N/O	1							
			N/C	1								
F5, Pneumatic timer	matched contactor	model of accessories		F5-T0	F5-T2	F5-T4	F5-D0	F5-D2	F5-D4			
	NC8-09~500	contacts	N/O	1	1	1	1	1	1	1		
			N/C	1	1	1	1	1	1	1		
		time-delay range(s)		0.1~3	0.1~30	10~180	0.1~3	0.1~30	10~180			
SR8, surge arrester	NC8-06M~12M	SR8-A										
	NC8-09~38	SR8-B										
	NC8-40~100	SR8-C										
Rated operational voltage(V)				up to 690								
Rated insulation voltage(V)				690								
Rated conventional current(A)				10								
Rated making capability				making current 10×Ie(AC-15) or 1×Ie(DC-13)								
Short-circuit protection				gG fuse: 10A								
Control capacity		AC-15		360VA								
		AC-13		69W								
Standard				IEC/EN 60947-5-1								
Certificate				CE, UL, KEMA								
Protection degree				IP20								
Cable connection (mm ²)	flexible cable (without cold-press terminal)	single cable		1~4								
		duad cable		1~4								
	flexible cable (with cold-press terminal)	single cable		1~4								
		duad cable		1~2.5								
	inflexible cable	single cable		1~4								
		duad cable		1~4								
screw size				M3.5								
tightening torque		(N.m)		1.2								
		(lb.in.)		7								

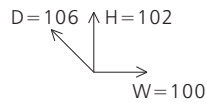
Note: the requirement to the environment of accessories is same with that of the contactors'.
 You can order the product that you need or recognize your existing product according to the above-mentioned number and the letter of alphabet code.

5. Derived products

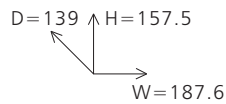
5.1 3-pole Reversing contactor



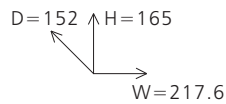
Frame size	Aux. contacts	
	1NO+1NC	2NO+2NC
9A	NC8-09/N	NC8-0922/N
12A	NC8-12/N	NC8-1222/N
18A	NC8-18/N	NC8-1822/N



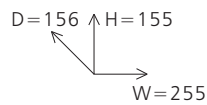
Frame size	Aux. contacts	
	1NO+1NC	2NO+2NC
25A	NC8-25/N	NC8-2522/N
32A	NC8-32/N	NC8-3222/N
38A	NC8-38/N	NC8-3822/N



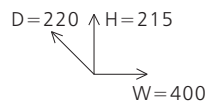
Frame size	Aux. contacts	
	1NO+1NC	
40A	NC8-40/N	
50A	NC8-50/N	
65A	NC8-65/N	



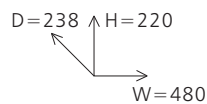
Frame size	Aux. contacts	
	1NO+1NC	
80A	NC8-80/N	
100A	NC8-100/N	



Frame size	Aux. contacts	
	2NO+2NC	
115A	NC8-115/N	
150A	NC8-150/N	
170A	NC8-170/N	



Frame size	Aux. contacts	
	4NO+4NC	
205A	NC8-205/N	
265A	NC8-265/N	
300A	NC8-300/N	



Frame size	Aux. contacts	
	4NO+4NC	
400A	NC8-400/N	
500A	NC8-500/N	

5.2 4-pole Reversing contactor



D=82 H=92
 W=100

Frame size	Main contacts
	4NO
9A	NC8-09/4/N
12A	NC8-12/4/N
18A	NC8-18/4/N



D=90 H=102
 W=122

Frame size	Main contacts
	4NO
25A	NC8-25/4/N
32A	NC8-32/4/N
38A	NC8-38/4/N



D=139 H=157.5
 W=187.6

Frame size	Main contacts
	4NO
40A	NC8-40/4/N
50A	NC8-50/4/N
65A	NC8-65/4/N



D=152 H=165
 W=217.6

Frame size	Main contacts
	4NO
80A	NC8-80/4/N
100A	NC8-100/4/N

5.3 Mini type Reversing contactors/AC coil



D=58 H=64
 W=91



D=58 H=64
 W=91

3-pole		
Frame size	Aux. contacts	
	1NO	1NC
6A	NC8-06M10/N	NC8-06M01/N
9A	NC8-09M10/N	NC8-09M01/N
12A	NC8-12M10/N	NC8-12M01/N

4-pole	
Frame size	Main contacts
	4NO
6A	NC8-06M/4/N
9A	NC8-09M/4/N
12A	NC8-12M/4/N

5.4 Mini type Reversing contactors/DC coil



D=70 H=64
 W=91



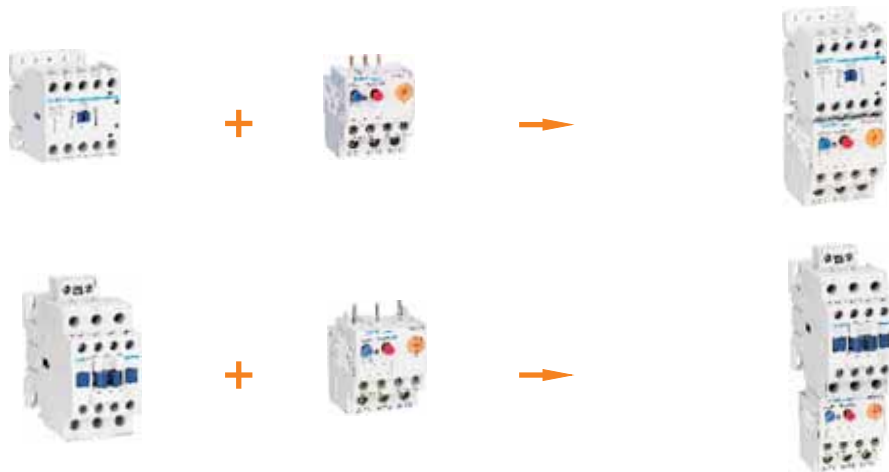
D=70 H=64
 W=91

3-pole		
Frame size	Aux. contacts	
	1NO	1NC
6A	NC8-06M10/Z/N	NC8-06M01/Z/N
9A	NC8-09M10/Z/N	NC8-09M01/Z/N
12A	NC8-12M10/Z/N	NC8-12M01/Z/N

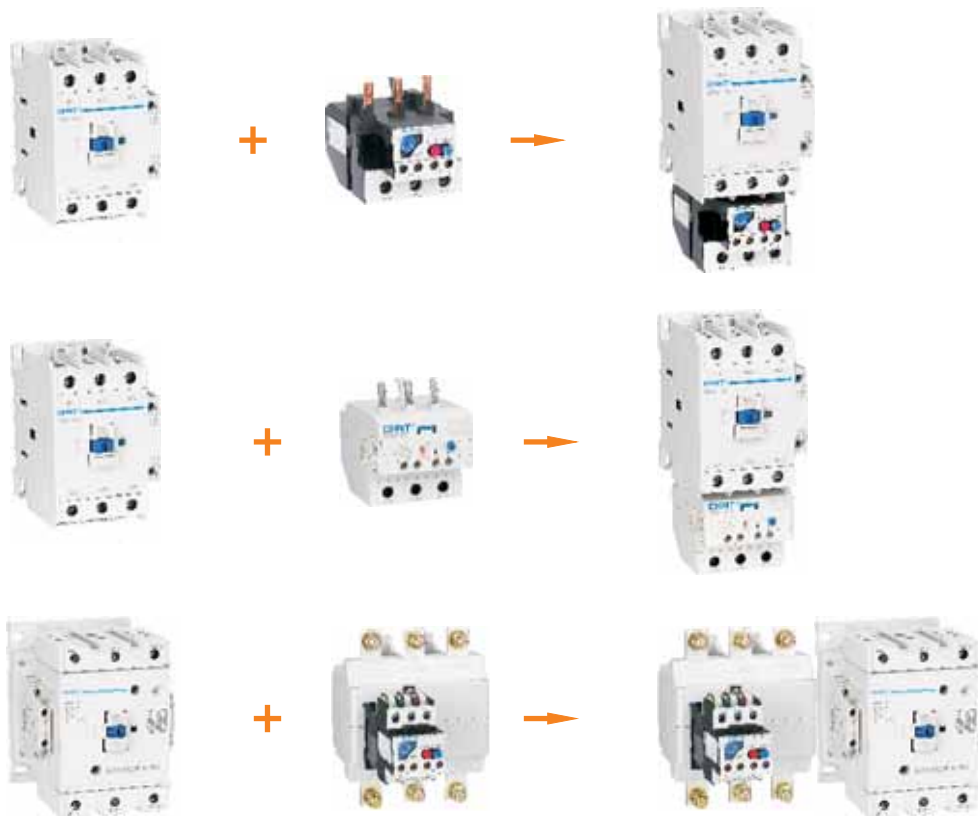
4-pole	
Frame size	Main contacts
	4NO
6A	NC8-06M/4/Z/N
9A	NC8-09M/4/Z/N
12A	NC8-12M/4/Z/N

5.5 Magnetic starter

Mini type frame size from 6A to 12A



Normal type frame size from 40A to 170A



5.6 Star-delta starter



6. Overall and mounting dimensions (mm)

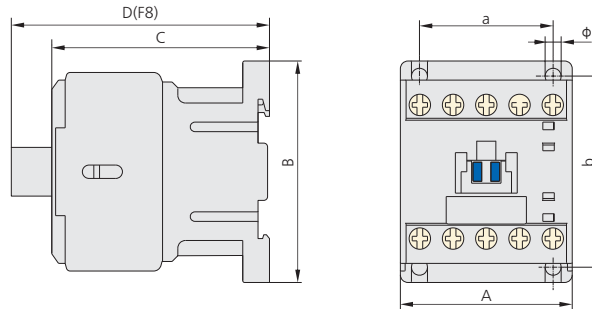


NC8-06M~12M
NC8-06M/4~12M/4

Model	Amax	Bmax	Cmax	Dmax	a	b	φ
NC8-06M~12M	45	59	58	94	35±0.28	50±0.32	4.2
NC8-06M/4~12M/4	45	59	58	94	35±0.28	50±0.32	4.2
NC8-06M/Z~12M/Z	45	59	70	106	35±0.28	50±0.32	4.2
NC8-06M/4/Z~12M/4/Z	45	59	70	106	35±0.28	50±0.32	4.2



NC8-06M/Z~12M/Z
NC8-06M/4/Z~12M/4/Z

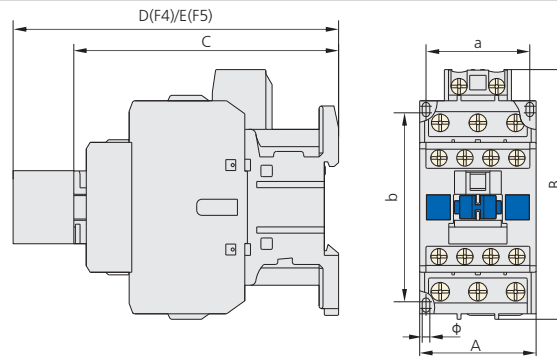


NC8-09~18

Model	Amax	Bmax	Cmax	Dmax	Emax	a	b	φ
NC8-09~18	45	87	87	120	142	35±0.28	55~63	4.4
NC8-09/Z~18/Z	45	87	123	156	178	35±0.28	55~63	4.4
NC8-25~38	45	97	106	139	160	35±0.28	60~70	4.4
NC8-25/Z~38/Z	45	97	141	174	195	35±0.28	60~70	4.4



NC8-25~38

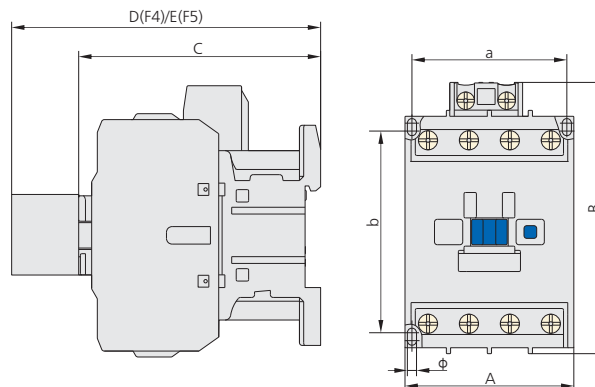


NC8-09/4~18/4

Model	Amax	Bmax	Cmax	Dmax	Emax	a	b	φ
NC8-09/4~18/4	45	87	82	115	136	35±0.28	55~63	4.4
NC8-09/4/Z~18/4/Z	45	87	118	151	172	35±0.28	55~63	4.4
NC8-25/4~38/4	57	97	90	122.5	144	35±0.28	60~70	4.4
NC8-25/4/Z~38/4/Z	57	97	125	158	180	35±0.28	60~70	4.4



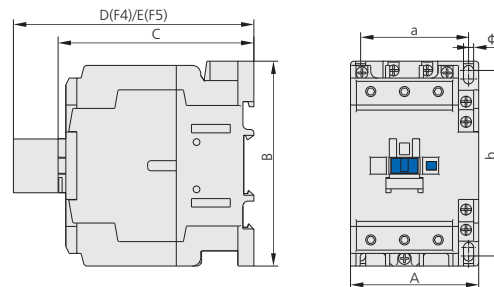
NC8-25/4~38/4





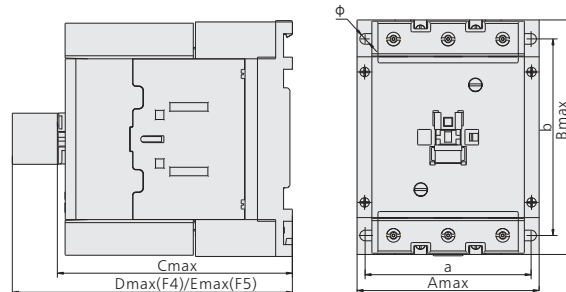
NC8-40~65

Model	Amax	Bmax	Cmax	Dmax	Emax	a	b	φ
NC8-40~65	77	122.5	118	150	172	64±0.37	100~110	6.0
NC8-40/Z~65/Z	77	142	179	212	233	40	105	6.5
NC8-80~100	87	130	127	159	180	74±0.37	105~116	5.5
NC8-80/Z~100/Z	87	147	184	217	238	40	105	6.5



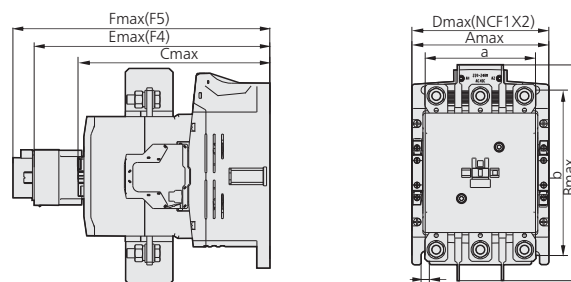
NC8-80~100

Model	Amax	Bmax	Cmax	Dmax	Emax	a	b	φ
NC8-115~170	120	156	155	190.5	210.5	96~110	130±0.8	7.0



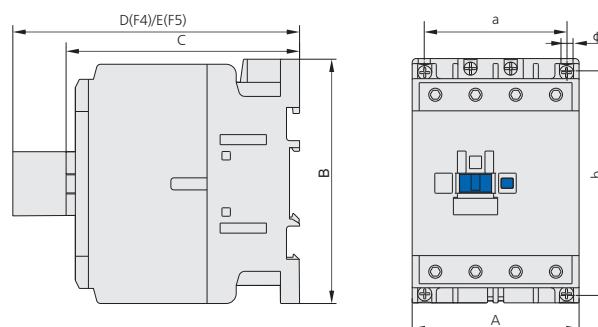
NC8-115~170

Model	Amax	Bmax	Cmax	Dmax	Emax	a	b	φ
NC8-205~300	150	235	207	239	260	120	180	9.0
NC8-400~500	165	248	225	258	280	130	180	9.0



NC8-205~500

Model	Amax	Bmax	Cmax	Dmax	Emax	a	b	φ
NC8-40/4~65/4	84	122.5	118	150	172	71±0.37	100~110.5	6.0
NC8-40/4/Z~65/4/Z	84	142	179	212	233	40	105	6.5
NC8-80/4~100/4	99	130	127	158	180	86±0.5	105~118.5	5.5
NC8-80/4/Z~100/4/Z	99	147	184	217	238	40	105	6.5



NC8-40/4~65/4

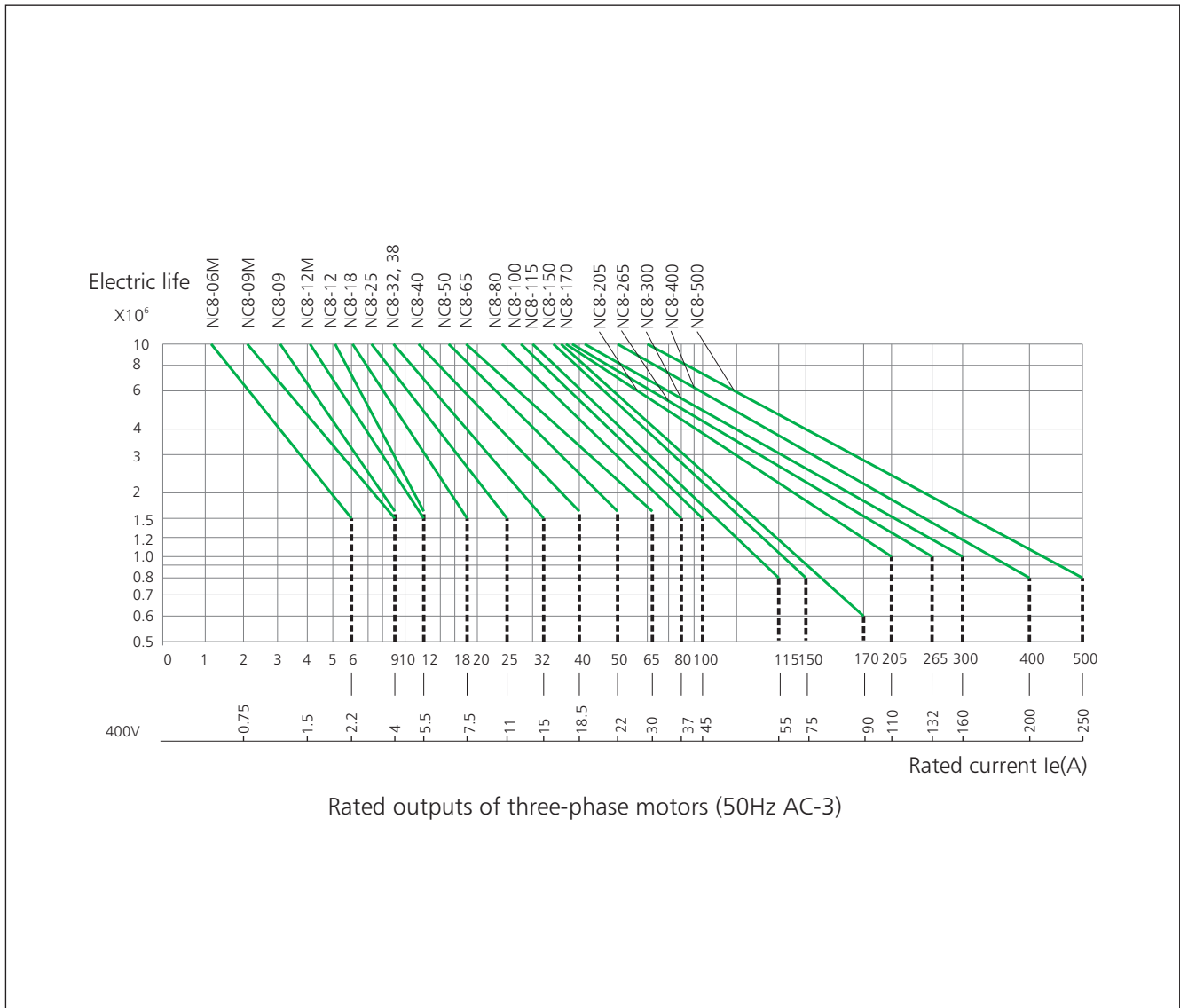


NC8-80/4~100/4

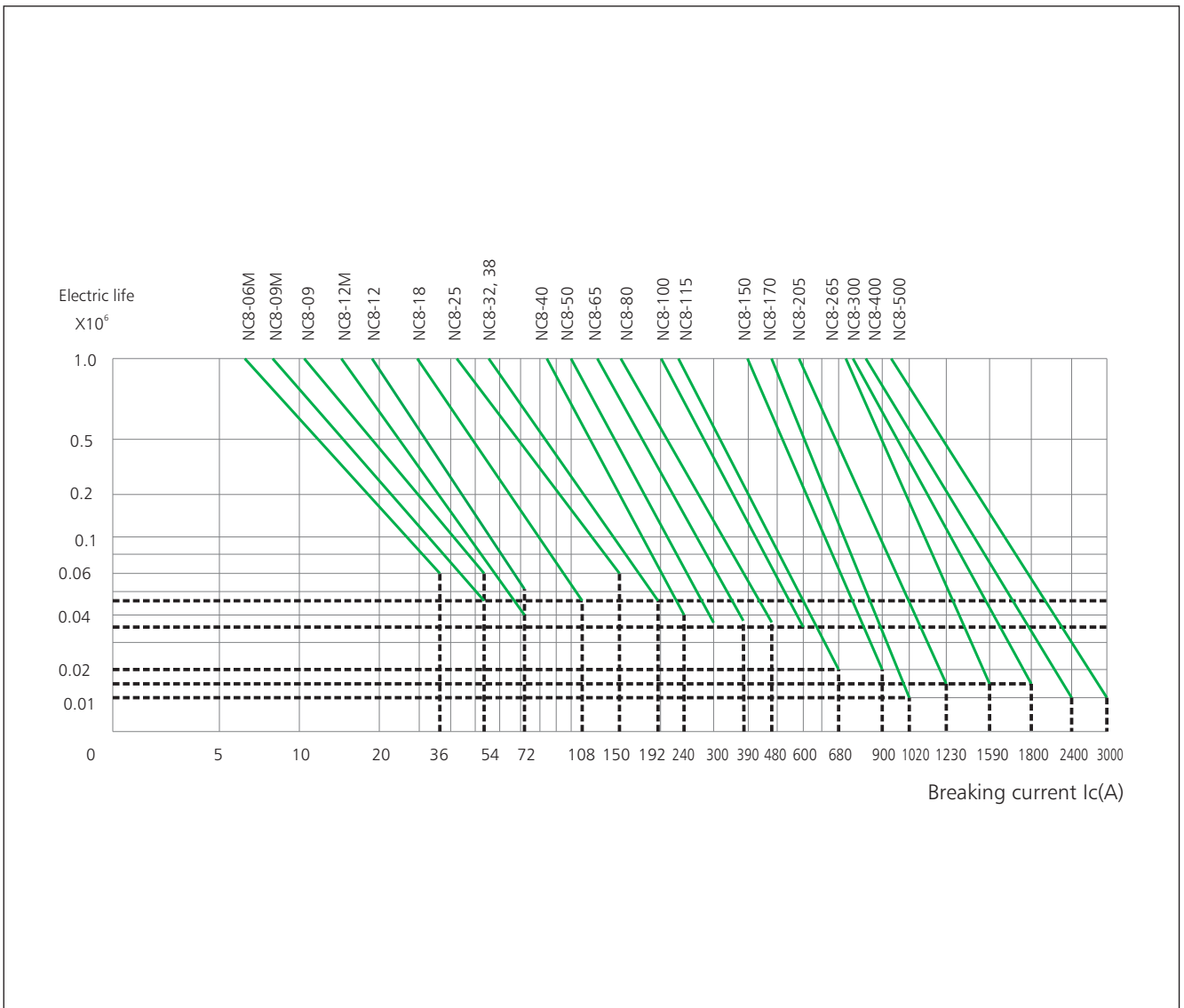
7. Excursus

7.1 Electric life Curves

Electric life curves (AC-3 Ue=400V)



Electric life curves (AC-2, AC-4 U_e=400V)



Example:

Request to control the start of three-phase motors

main technical parameter of three-phase motors: P=11kW, U_e=380V, I_e=22.6A

usage category: AC-3, The electric life span of request: 1,000,000 operations

the contactor should be NC8-25 according to the curves above

7.2 The application in illumination circuit

Model of contactor			06M, 09M, 12M	09, 12	18	25	32, 38	40	50, 65	80, 100
lamp technical data (220V/240V)			maximum permissible number of lamps per phase							
W	A	μ F								
Incandescent lamp										
60	0.27	-	35	59	77	92	129	163	207	296
75	0.34	-	28	47	61	73	103	129	164	235
100	0.45	-	21	35	46	55	77	97	124	177
150	0.68	-	14	23	30	36	51	64	82	117
200	0.91	-	10	17	23	27	38	48	62	88
300	1.40	-	6	11	15	18	25	31	40	57
500	2.30	-	4	7	8	11	15	19	24	34
750	3.40	-	2	4	6	7	10	13	16	23
1000	4.60	-	2	3	4	5	7	9	12	17
Single fluorescent lamp (with starter, without compensation)										
20	0.39	-	24	41	53	66	89	112	143	205
40	0.45	-	21	35	46	57	77	97	124	177
65	0.70	-	12	22	30	37	50	62	80	114
80	0.80	-	12	20	26	32	43	55	70	100
110	1.15	-	8	12	15	20	26	35	46	66
Single fluorescent lamp (with starter, with parallel compensation)										
20	0.18	5	83	94	105	155	215	233	335	530
40	0.26	5	58	65	75	107	150	160	230	365
65	0.42	7	35	40	45	66	92	100	142	225
80	0.52	7	28	32	36	53	74	80	115	180
100	0.60	16	23	26	29	43	59	64	92	145
110	0.70	18	21	24	27	40	55	59	85	135
Fluorescent lamps in dual mounting (with starter, without compensation)										
2×20	2×0.22	-	21	36	46	58	78	100	126	180
2×40	2×0.41	-	11	18	24	30	42	52	68	96
2×65	2×0.67	-	7	10	14	18	26	32	40	58
2×80	2×0.82	-	5	8	12	14	20	26	34	48
2×110	2×1.10	-	4	6	8	10	14	18	24	36

..... to be continued

Model of contactor			06M, 09M, 12M	09, 12	18	25	32, 38	40	50, 65	80, 100
lamp technical data (220V/240V)			maximum permissible number of lamps per phase							
W	A	μ F								
Fluorescent lamps in dual mounting (with starter, with compensation in series)										
2×20	2×0.13	-	36	60	80	100	134	168	214	306
2×40	2×0.24	-	20	32	42	54	72	90	116	166
2×65	2×0.39	-	12	20	26	32	44	56	70	102
2×80	2×0.48	-	10	16	20	26	36	44	58	82
2×110	2×0.65	-	7	12	16	20	26	32	42	60
Single fluorescent lamp (without starter, without compensation)										
20	0.43	-	22	37	48	60	97	102	130	186
40	0.55	-	17	29	38	47	63	80	101	145
65	0.80	-	12	20	26	32	43	55	70	100
80	0.95	-	10	16	22	27	36	46	58	84
110	0.40	-	6	11	15	18	25	31	40	57
Single fluorescent lamp (with starter, with parallel compensation)										
20	0.19	5	50	84	110	136	184	231	294	421
40	0.29	5	33	55	72	89	101	151	193	275
65	0.46	7	20	34	45	56	76	95	121	173
80	0.57	7	16	28	36	45	61	77	98	140
110	0.79	16	-	20	26	32	44	55	70	101
Fluorescent lamps (without starter, without compensation)										
2×20	2×0.25	-	19	32	42	52	70	88	112	160
2×40	2×0.47	-	10	16	22	26	36	46	158	84
2×65	2×0.76	-	6	10	12	16	22	28	36	52
2×80	2×0.93	-	5	8	10	12	18	22	30	42
2×110	2×1.30	-	3	6	8	10	12	16	20	30
Fluorescent lamps in dual mounting (without starter, with compensation in series)										
2×20	2×0.15	-	34	56	74	92	124	156	200	234
2×40	2×0.26	-	18	30	40	50	66	84	106	152
2×65	2×0.43	-	11	18	24	30	40	50	64	92
2×80	2×0.53	-	9	14	18	24	32	40	32	74
2×110	2×0.72	-	6	10	14	18	24	30	38	54
Low press sodium vapour lamps (with parallel compensation)										
35	0.3	17	-	40	50	63	86	110	140	200
55	0.4	17	-	30	37	47	65	82	105	150
90	0.6	25	-	-	25	31	43	55	70	100
135	0.9	36	-	-	-	21	28	36	46	66
150	1.0	36	-	-	-	19	26	33	42	60
180	1.2	36	-	-	-	15	21	27	35	50
200	1.3	36	-	-	-	14	20	25	32	46

Model of contactor	06M, 09M, 12M	09, 12	18	25	32, 38	40	50, 65	80, 100		
lamp technical data (220V/240V)										
			maximum permissible number of lamps per phase							
W	A	μ F								
High press sodium vapour lamps (without compensation)										
150	1.9	-	4	6	7	10	13	17	22	31
250	3.2	-	2	3	4	5	8	10	13	18
400	5.0	-	1	2	3	3	5	6	8	12
700	8.8	-	-	-	2	2	2	3	4	6
1000	12.4	-	-	-	1	1	2	2	3	4
High press sodium vapour lamps (with parallel compensation)										
150	0.84	20	-	-	17	22	30	39	50	71
250	1.4	32	-	-	-	13	18	23	30	42
400	2.2	48	-	-	-	8	11	15	19	27
700	3.6	96	-	-	-	-	6	8	10	15
1000	5.5	120	-	-	-	-	-	6	7	10
High press hydrargyrum lamps (without compensation)										
50	0.54	-	14	22	27	35	48	64	77	111
80	0.81	-	9	14	18	23	32	40	51	74
125	1.20	-	6	9	12	15	21	27	34	49
250	2.30	-	3	5	6	8	11	14	17	26
400	4.10	-	1	2	3	4	6	8	10	14
700	6.80	-	-	1	2	2	3	4	6	8
1000	9.90	-	-	1	1	1	2	3	4	6
High press hydrargyrum lamps (with parallel compensation)										
50	0.30	10	-	40	50	63	86	110	140	120
80	0.45	10	-	26	33	42	57	73	93	133
125	0.67	10	-	17	22	28	38	49	62	89
250	1.3	18	-	9	11	14	20	25	32	46
400	2.3	25	-	-	6	8	11	14	18	26
700	3.8	40	-	-	-	5	6	8	11	15
1000	5.5	60	-	-	-	3	4	8	7	10

8. Ordering information

8.1 The following items should be illustrated when ordering:

8.1.1 The full name and model of contactor;

8.1.2 Rated operational voltage and frequency of coil;

8.1.3 Ordering total pcs;

8.2 Ordering example: NC8-1822 AC contactor, coil voltage 220V, 50Hz 10 pcs;