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

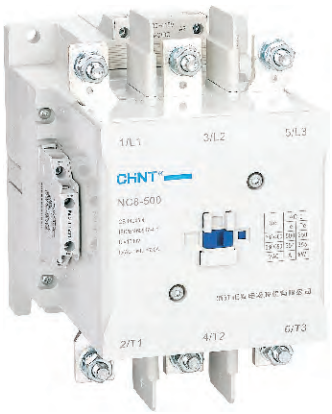
3-pole contactor




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

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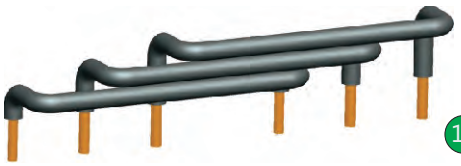

11

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6

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

D

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 ±5°

2.6 NC8-06 (M) ~65 : IP20
NC8-80~170 : IP10
NC8-205~500 : IP00(IP20 front face with shrouds SHD)

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
/W:Wide voltage range operation coil
(only for 115~170A)

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),expect (40～100、DC)

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，expect DC

Surge Arrester

NCL8 - A

A: for NC8-0 9～38
B: for NCB- 40～100，expect DC
C: for NC8-205～500

Mechanical interlocking

D

Quick selection table

Frame size		9A	12A	18A	25A	32A	38A
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		55		55
AC-3	220V/230V/240V	2.2	9	3	12	4	18	5.5	25	7.5	32	9	38
	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
3-pole contactors									
Auxiliary contacts	1NO+1NC	NC8-40	NC8-50	NC8-65	NC8-80	NC8-100	NC8-115	NC8-150	NC8-170

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
3-pole contactors						
Auxiliary contacts	2NO+2NC	NC8-205	NC8-265	NC8-300	NC8-400	NC8-500

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
4-pole Contactors							
Auxiliary 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		55		55
AC-3	220V/230V/240V	2.2	9	3	12	4	18	5.5	25	7.5	32	9	38
	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	

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Frame size		**40A**	**50A**	**65A**	**80A**	**100A**
4-pole contactors						
Auxiliary contacts	4NO	NC8-40/4	NC8-50/4	NC8-65/4	NC8-80/4	NC8-100/4

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
Contactors	 3-pole		 4-pole	 3-pole		 4-pole

Auxiliary contact block	 F4 4-pole Front mount	Contacts aux	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
	 F4 2-pole Front mount			
	 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-B/RC250 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

NR8-38
Bimetallic style
Overload relay

NR8-38		
Rated current (A)		
0.10-0.14	0.9-1.25	7.5-10
0.14-0.2	1.1-1.6	9-13
0.18-0.25	1.4-2	12-16
0.22-0.32	1.8-2.5	14-20
0.28-0.4	2.2-3.2	18-24
0.35-0.5	2.8-4	23-32
0.45-0.63	3.5-5	30-38
0.55-0.8	4.5-6.3	
0.7-1	5.5-8	

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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	
			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	
	 F4 2-pole Front mount				
	 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  F4 2-pole Front mount			Contacts aux: 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				
	 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				
	 1NO+1NC NCF1 2-pole Side mount		NCF1-11C	 1NO+1NC NCF1 2-pole Side mount			NCF1-11C/B	
Surge arrester	/							

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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 Rated current (A) 23 ~ 32 30 ~ 40 37 ~ 50 48 ~ 65 55 ~ 70 63 ~ 80 80 ~ 93 NRE8-100			NR2-200 Rated current (A) 100 ~ 160 125 ~ 200		
	 NRE8-100 Electronic style Overload relay		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
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	

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Frame size	6A	9A	12A	6A	9A	12A
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
			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℃~+40℃, the average temperature during 24 hours should not exceed +35℃. More information refer to table 1		
	transportation or storage	-25℃~+55℃, or up to +70℃ 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℃. Higher relative humidity is allowable under lower temperature. For example, RH could be +20℃, special measure should be taken to occurrence of dews.		
Installation conditions		the inclination between installation plane and vertical plane is within ±5°		
Impact and shake		the product should be used in the places where there are no obvious impact and shake		

Table 1

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

Table 2

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

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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	10.6
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 32					
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 0.16~0.25 0.25~0.4 0.4~0.63	0.63~1 1~1.6 1.6~2.5	2.5~4 4~6 5.5~8 7~10	9~13	0.10-0.14 0.14-0.2 0.18-0.25 0.22-0.32	0.28-0.4 0.35-0.5 0.45-0.63 0.55-0.8	0.7-1 0.9-1.25 1.1-1.6 1.4-2	1.8-2.5 2.2-3.2 2.8-4 3.5-5	4.5-6.3 5.5-8 7.5-10 9-13	12-16 14-20 18-24 23-32	30-38

25A	32A	38A	40A	50A	65A	80A	100A	115A	150A	170A
	Normal type									
40	55	55	60	80	80	125	125	200	200	275
	690									
	6		8							
	making current:10×Ie(AC-3) or 12×Ie(AC-4)									
	making-breaking current:8×Ie(AC-3) or 10×Ie(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	10	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								800,000 Operations		600,000 Operations
to see Electrical life curves, page 32										
			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		
0.10-0.14 0.45-0.63 1.8-2.5 7.5-10 30-38 0.14-0.2 0.55-0.8 2.2-3.2 9-13 0.18-0.25 0.7-1 2.8-4 12-16 0.22-0.32 0.9-1.25 3.5-5 14-20 0.28-0.4 1.1-1.6 4.5-6.3 18-24 0.35-0.5 1.4-2 5.5-8 23-32			23~32 30~40 37~50 48~65	55~70 63~80 80~93		65 100		100~160 125~200		

D

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	1,000,000 Operations			800,000 Operations		
	AC-4	to see Electrical life curves, page 32					
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)	0.8		1.2			2			6				
			(lb.in.)	7		7			10			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)	0.8		1.2										
			(lb.in.)	7		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)	10			14			
			(lb.in.)				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)	1.2						
			(lb.in.)	7						

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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)	AC 50Hz AC 50Hz/60Hz AC 60Hz	24, 36, 48, 110, 127, 220, 230, 240, 380, 400, 415													
	DC	24, 48, 110, 125, 220, 250													
Acting range	attraction(hot)	(85%~110%)Us; +40℃													
	release(cold)	AC: (20%~75%)Us, DC: (10%~75%)Us; -5℃													
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			Normal type				
Coil voltage(V)	AC	AC/DC			AC/DC				
	DC	110~127, 220~240, 380~415 /W: 100~250			110~127, 220~240, 380~415				
Acting range	attraction(hot)	(85%~110%)Us; +40℃							
	release(cold)	(10%~75%)Us; -5℃							
The average power of AC coil(VA)	start	600~700			300~600			500~800	
	holding	3~5			6~11			7~12	
Heat wastage(W)	AC	2~4			5~10			6~11	
	DC								
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

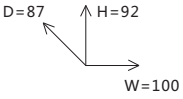
F4, front mount	matched contactor	model of accessories		F4-20	F4-11	F4-02	F4-40	F4-31	F4-22	F4-13	F4-04
	NC8-09~500	contacts	N/O	2	1	0	4	3	2	1	0
			N/C	0	1	2	0	1	2	3	4
F8, front mount	matched contactor	model of accessories		F8-20	F8-11	F8-02	F8-40	F8-31	F8-22	F8-13	F8-04
	NC8-06M~12M	contacts	N/O	2	1	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	
			N/C	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 accesseries 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.

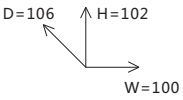
D

5. Derived products

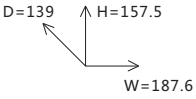
5.1 3-pole Reversing contactor



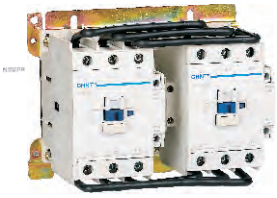
Frame size	Aux. contacts	
	1NO+1NC	2NO+2NC
9A	NC8-09/N	NC8-0922/N
12A	NC8-12/N	NC8-1222/N
18A	NC8-18/N	NC8-1822/N

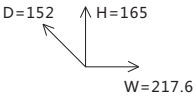


Frame size	Aux. contacts	
	1NO+1NC	2NO+2NC
25A	NC8-25/N	NC8-25922/N
32A	NC8-32/N	NC8-3222/N
38A	NC8-38/N	NC8-3822/N

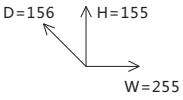


Frame size	Aux. contacts
	1NO+1NC
40A	NC8-40/N
50A	NC8-50/N
65A	NC8-65/N

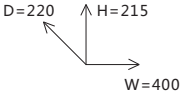




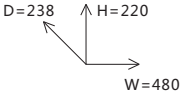
Frame size	Aux. contacts
	1NO+1NC
80A	NC8-80/N
100A	NC8-100/N



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

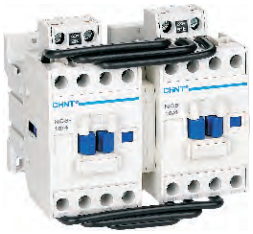


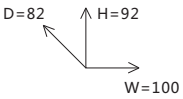
Frame size	Aux. contacts
	4NO+4NC
205A	NC8-205/N
265A	NC8-265/N
300A	NC8-300/N



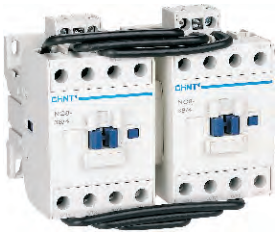
Frame size	Aux. contacts
	4NO+4NC
400A	NC8-400/N
500A	NC8-500/N

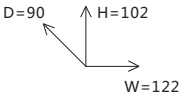
5.2 4-pole Reversing contactor





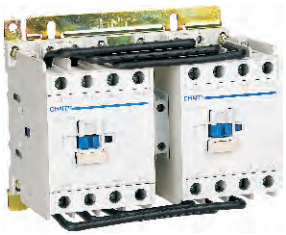
Frame size	Aux. contacts
	4NO
9A	NC8-09/4/N
12A	NC8-12/4/N
18A	NC8-18/4/N

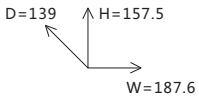




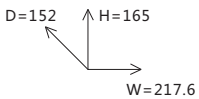
Frame size	Aux. contacts
	4NO
25A	NC8-25/4/N
32A	NC8-32/4/N
38A	NC8-38/4/N

D



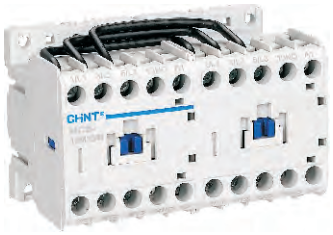


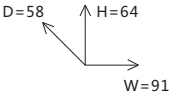
Frame size	Aux. contacts
	4NO
40A	NC8-40/4/N
50A	NC8-50/4/N
65A	NC8-65/4/N



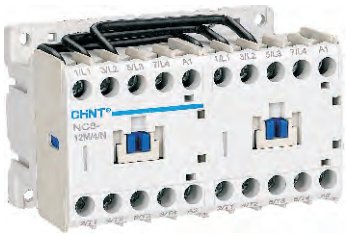
Frame size	Aux. contacts
	4NO
80A	NC8-80/4/N
100A	NC8-100/4/N

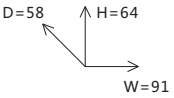
5.3 Mini type Reversing contactors/AC coil





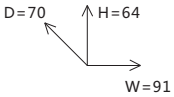
Frame size	3-pole	
	Aux. contacts	
	1NO	1NC
6A	NC8-06M10/N	NC8-06M01/N
9A	NC8-09M10/N	NC8-09M01/N
12A	NC8-12M10/N	NC8-12M01/N



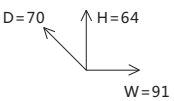


Frame size	4-pole	
	Main contacts	
	4NO	
6A	NC8-06M/4/N	
9A	NC8-09M/4/N	
12A	NC8-12M/4/N	

5.4 Mini type Reversing contactors/DC coil



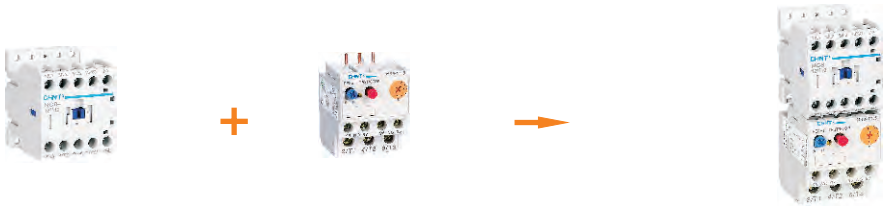
Frame size	3-pole	
	Aux. contacts	
	1NO	1NC
6A	NC8-06M10/Z/N	NC8-06M01/Z/N
9A	NC8-09M10/Z/N	NC8-09M01/Z/N
12A	NC8-12M10/Z/N	NC8-12M01/Z/N



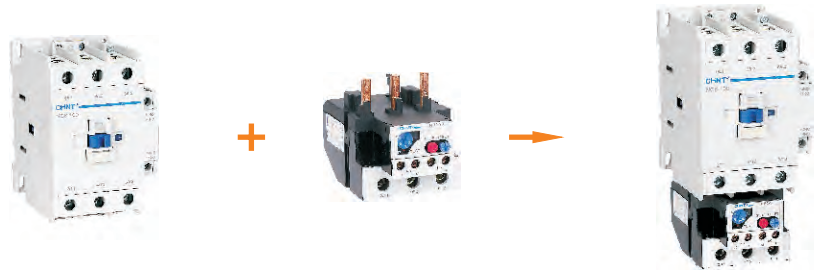
Frame size	4-pole	
	Main contacts	
	4NO	
6A	NC8-06M/4/Z/N	
9A	NC8-09M/4/Z/N	
12A	NC8-12M/4/Z/N	

5.5 Magnetic starter

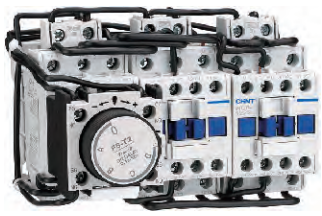
Mini type frame size from 6A to 12A



Normal type frame size from 40A to 170A



5.6 Star-delta starter



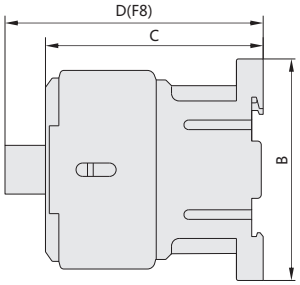
D

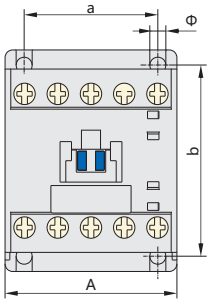
6. Overall and mounting dimensions (mm)

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

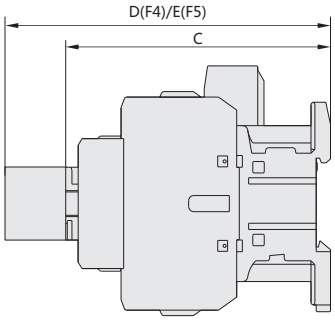


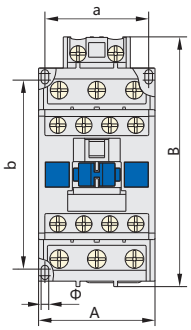


NC8-09~18

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

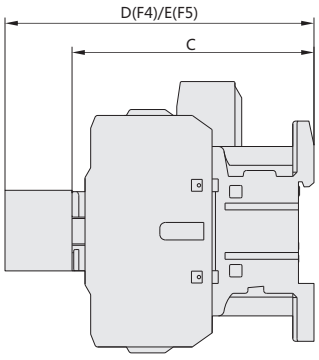
NC8-25~38

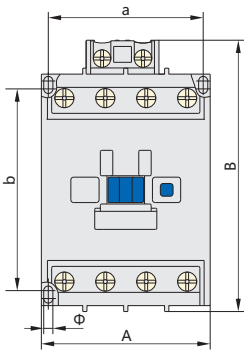


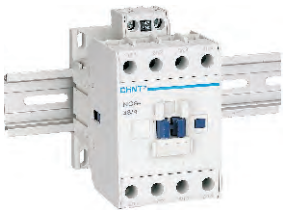


Model	Amax	Bmax	Cmax	Dmax	Emax	a	b	Φ
NC8-09/4~18/4	45	87	82	115	136	35±0.28	55~63	4.4
NC8-09/4/Z~18/4/Z	45	87	118	151	172	35±0.28	55~63	4.4
NC8-25/4~38/4	57	97	90	122.5	144	35±0.28	60~70	4.4
NC8-25/4/Z~38/4/Z	57	97	125	158	180	35±0.28	60~70	4.4

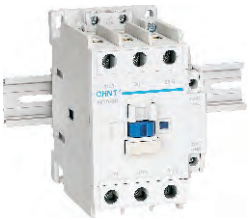
NC8-09/4~18/4





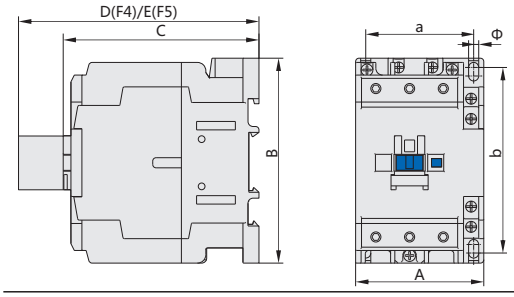


NC8-25/4~38/4



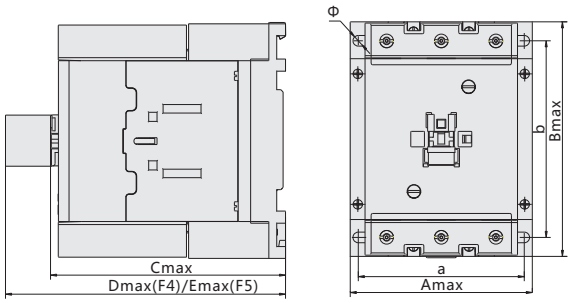
NC8-40~65

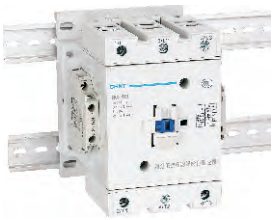
Model	Amax	Bmax	Cmax	Dmax	Emax	a	b	Φ
NC8-40~65	77	122.5	118	150	172	64±0.37	100~110	6.0
NC8-40/Z~65/Z	77	142	179	212	233	40	105	6.5
NC8-80~100	87	130	127	159	180	74±0.37	105~116	5.5
NC8-80/Z~100/Z	87	147	184	217	238	40	105	6.5



NC8-80~100

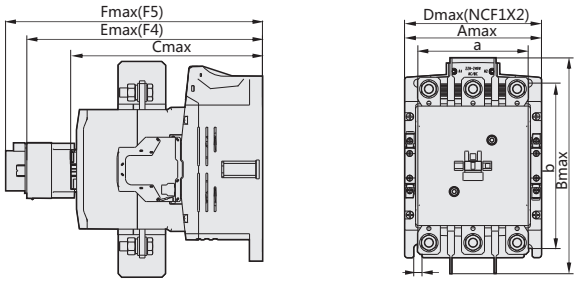
Model	Amax	Bmax	Cmax	Dmax	Emax	a	b	Φ
NC8-115~170	120	156	155	190.5	210.5	96~110	130±0.8	7.0

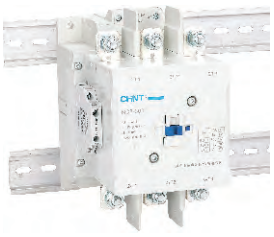




NC8-115~170

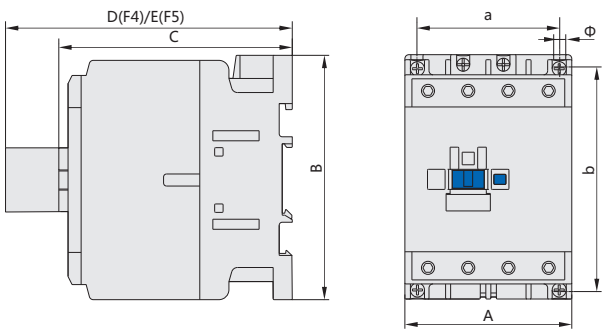
Model	Amax	Bmax	Cmax	Dmax	Emax	a	b	Φ
NC8-205~300	150	235	207	239	260	120	180	9.0
NC8-400~500	165	248	225	258	280	130	180	9.0

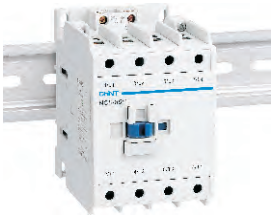




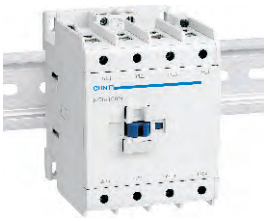
NC8-205~500

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

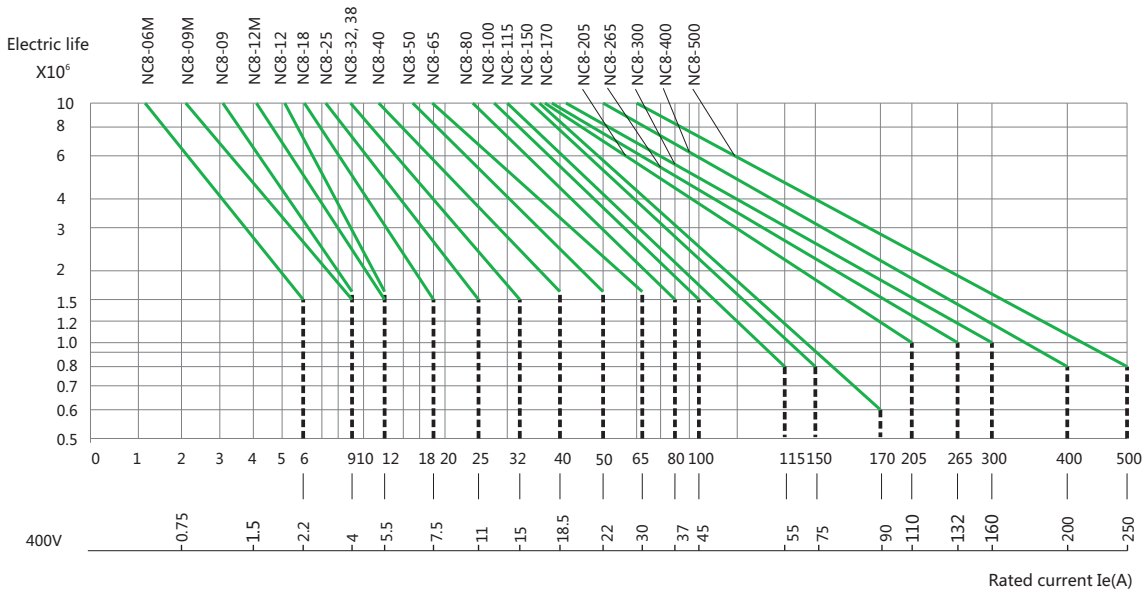


NC8-80/4~100/4

7. Excursus

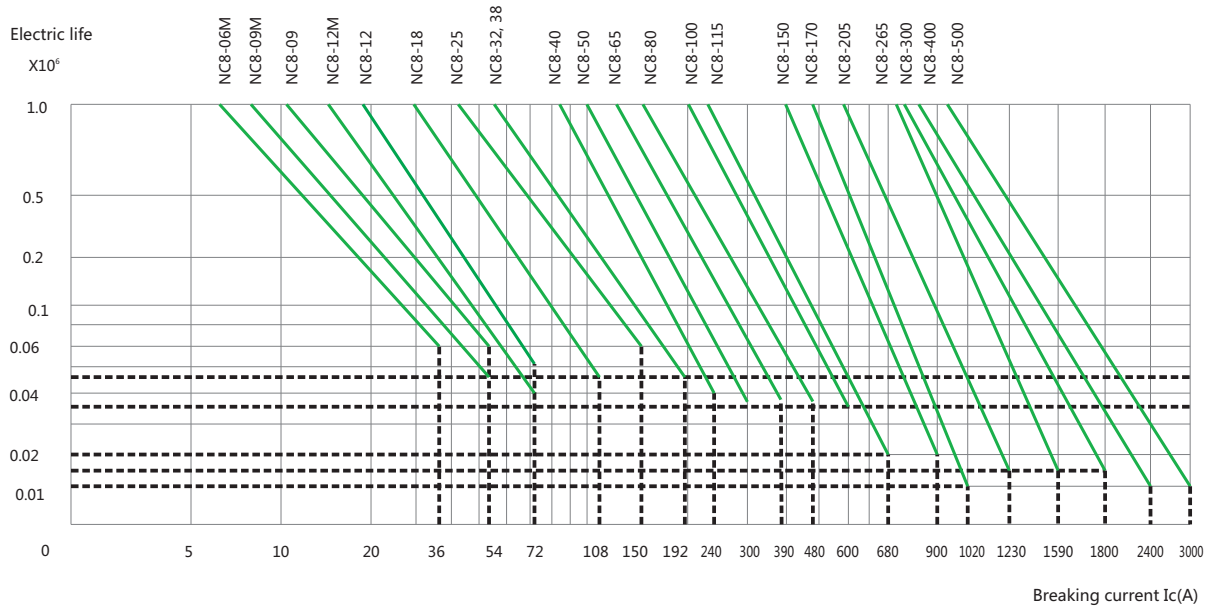
7.1 Electric life Curves

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



Rated outputs of three-phase motors (50Hz AC-3)

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



Example:
Request to control the start of three-phase motors
main technical parameter of three-phase motors: P=11kW, Ue=380V, Ie=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	μF								
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	μF								
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	μF								
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;