

NC1 Contactor, 9~95A

1. General

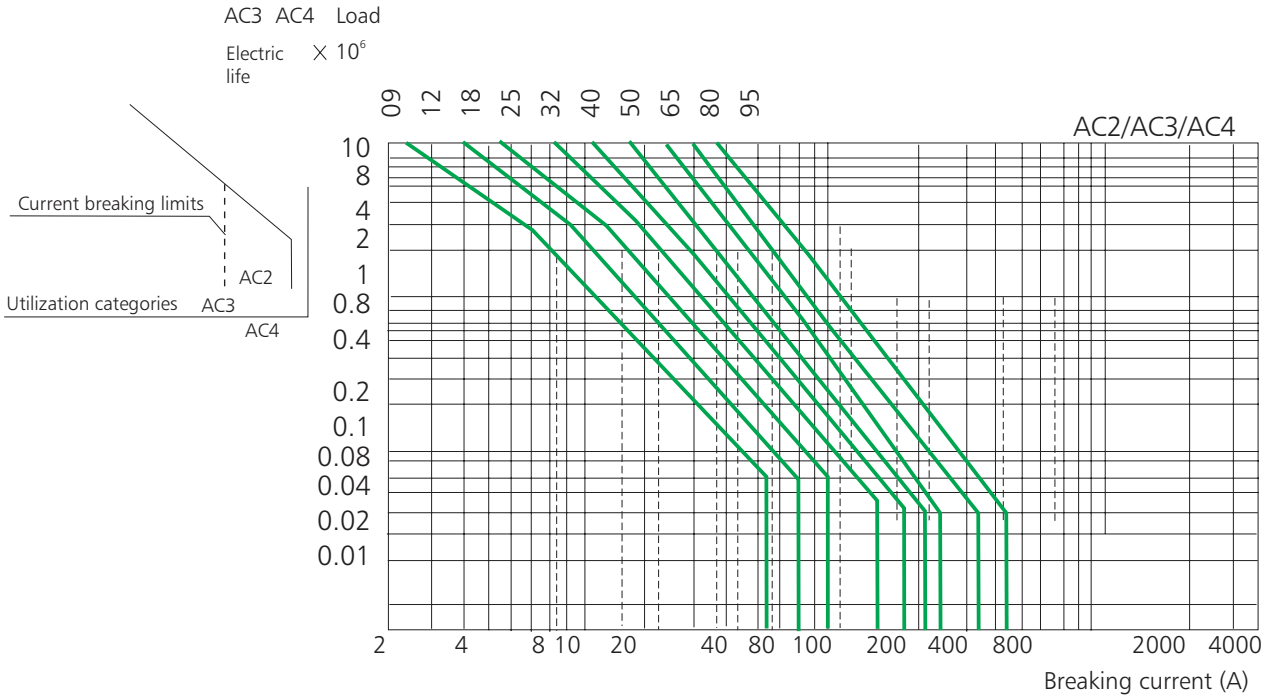
1.1 Certificates: CE, KEMA, VDE, EK, ESC, UKrSEPRO, GOST, RCC, UL;
1.2 Electric ratings: AC50/60Hz, 690V, up to 95A;
1.3 Application: remote making & breaking circuits; protect circuit from over-load when assembling with thermal over-load relay;
Frequent start-up and control of AC contactor;
1.4 Utilization category: AC-3, AC-4;
1.5 Altitude: ≤2000m;
1.6 Ambient temperature: -5℃~+40℃;
1.7 Mounting category: III
1.8 Mounting conditions:
inclination between the mounting plane and the vertical plane should not exceed ±5°
1.9 Standard: IEC/EN 60947-4-1

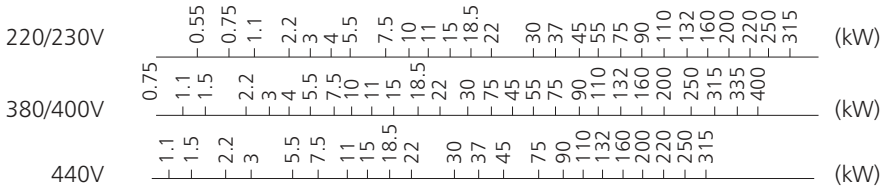
2. Type designation

N C 1-□□ □□ - □

- Company code
- Contactor
- Design sequence No.
- Basic specification, expressed with the rated operational current (380V/400V, AC-3)
- Number of contacts
  - 10: 3 N/O main contacts+1 N/O auxiliary contact (9A,12A,18A,25A,32A)
  - 01: 3 N/O main contacts+1 N/C auxiliary contact (9A,12A,18A,25A,32A)
  - 11: 3 N/O main contacts+1 N/O and 1N/C auxiliary contact (40A,50A,65A,80A,95A)
  - 04: 4 N/O main contacts (9A,12A,25A,40A,50A,65A,80A,95A)
  - 08: 2 N/O and 2N/C main contacts (9A,12A,25A,40A,50A,65A,80A,95A)
- Z: DC coil Blank: AC coil

3. Curves


AC3 AC4 Load
Electric life
X 10^6
09 12 18 25 32 40 50 65 80 95
AC2/AC3/AC4
10 8 4 2 1 0.8 0.4 0.2 0.1 0.08 0.04 0.02 0.01
Current breaking limits
AC2
Utilization categories AC3
AC4
2 4 8 10 20 40 80 100 200 400 800 2000 4000
Breaking current (A)

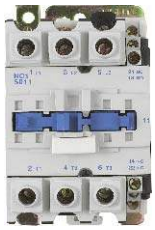

220/230V
0.55 0.75 1.1 2.2 3 4 5.5 7.5 10 11 15 18.5 22 30 37 45 55 75 90 110 132 160 200 220 250 315
(kW)
380/400V
0.75 1.1 1.5 2.2 3 4 5.5 7.5 10 11 15 18.5 22 30 75 45 55 75 90 110 132 160 200 250 315 335 400
(kW)
440V
1.1 1.5 2.2 3 5.5 7.5 11 15 18.5 22 30 37 45 75 90 110 132 160 200 220 250 315
(kW)

4. Technical data

4.1 AC coil contactor

★ AC coil operation

Items / Model			NC1-09	NC1-12	NC1-18	NC1-25	
Frame			Frame 1 (3P, 4P)		Frame 2 (3P)	Frame 3 (3P, 4P)	
							
Rated conventional heating current (A) AC-1			20	20	32	40	
Rated operational current (A)	380/400V	AC-3	9	12	18	25	
		AC-4	3.5	5	7.7	8.5	
	660/690V	AC-3	6.6	8.9	12	18	
		AC-4	1.5	2	3.8	4.4	
Rated insulation voltage (V AC)			690	690	690	690	
Power of controlled 3-phase cage motor (AC-3)	kW	220/230V AC	2.2	3	4	5.5	
		380/400V AC	4	5.5	7.5	11	
		660/690V AC	5.5	7.5	10	15	
	hp	200V AC	3	5	7.5	7.5	
		240V AC	3	5	7.5	10	
		460V AC	5	7.5	10	15	
		600V AC	5	7.5	10	15	
Operating frequency (operations/h)	Electrical	AC-3	1,200	1,200	1,200	1,200	
		AC-4	300	300	300	300	
	Mechanical		3,600	3,600	3,600	3,600	
Electrical life ($\times 10^3$ operations)	AC-3		1,000	1,000	1,000	1,000	
	AC-4		200	200	200	200	
Mechanical life ($\times 10^6$ operations)			10	10	10	10	
Matched fuse type			RT16-20	RT16-20	RT16-32	RT16-40	

	NC1-32	NC1-40	NC1-50	NC1-65	NC1-80	NC1-95
	Frame 4 (3P)	Frame 5 (3P, 4P)			Frame 6 (3P, 4P)	
						
	50	60	80	80	95	95
	32	40	50	65	80	95
	12	18.5	24	28	37	44
	21	34	39	42	49	49
	7.5	9	12	14	17.3	21.3
	690	690	690	690	690	690
	7.5	11	15	18.5	22	25
	15	18.5	22	30	37	45
	18.5	30	37	37	45	45
	10	15	15	20	25	30
	15	20	20	25	30	30
	20	25	30	40	40	50
	20	25	30	40	40	50
	600	600	600	600	600	600
	300	300	300	300	300	300
	3,600	3,600	3,600	3,600	3,600	3,600
	800	800	600	600	600	600
	200	150	150	150	100	100
	8	8	8	8	6	6
	RT16-50	RT16-63	RT16-80	RT16-80	RT16-100	RT16-125

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4.2 DC coil contactor

★ DC coil operation(24V,110V,220V)

Items / Model				NC1-09Z	NC1-12Z	NC1-18Z	NC1-25Z	
Frame				Frame 1 (3P, 4P)		Frame 2 (3P)	Frame 3 (3P, 4P)	
								
Rated conventional heating current (A) AC-1				20	20	32	40	
Rated operational current (A)	380/400V		AC-3	9	12	18	25	
			AC-4	3.5	5	7.7	8.5	
	660/690V		AC-3	6.6	8.9	12	18	
			AC-4	1.5	2	3.8	4.4	
Conventional heating current (A)				20	20	32	40	
Rated insulation voltage (V AC)				690	690	690	690	
Power of controlled 3-phase cage motor (AC-3)	kW		220/230V AC	2.2	3	4	5.5	
			380/400V AC	4	5.5	7.5	11	
			660/690V AC	5.5	7.5	10	15	
Operating frequency (operations/h)	Electrical		AC-3	1,200	1,200	1,200	1,200	
			AC-4	300	300	300	300	
	Mechanical			3,600	3,600	3,600	3,600	
Electrical life ($\times 10^3$ operations)	AC-3			1,000	1,000	1,000	1,000	
	AC-4			200	200	200	200	
Mechanical life ($\times 10^6$ operations)				10	10	10	10	
Matched fuse type				RT16-20	RT16-20	RT16-32	RT16-40	

	NC1-32Z	NC1-40Z	NC1-50Z	NC1-65Z	NC1-80Z	NC1-95Z
	Frame 4 (3P)	Frame 5 (3P, 4P)			Frame 6 (3P, 4P)	
						
	50	60	80	80	95	95
	32	40	50	65	80	95
	12	18.5	24	28	37	44
	21	34	39	42	49	49
	7.5	9	12	14	17.3	21.3
	50	60	80	80	95	95
	690	690	690	690	690	690
	7.5	11	15	18.5	22	25
	15	18.5	22	30	37	45
	18.5	30	37	37	45	45
	600	600	600	600	600	600
	300	300	300	300	300	300
	3,600	3,600	3,600	3,600	3,600	3,600
	800	800	600	600	600	600
	200	150	150	150	100	100
	8	8	6	6	6	6
	RT16-50	RT16-63	RT16-80	RT16-80	RT16-100	RT16-125

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5. Accessories

5.1 Accessories

Items		Model	NC1-09(Z)	NC1-12(Z)	NC1-18(Z)	NC1-25(Z)	NC1-32(Z)
AC coil	Coil power	In-rush (VA)	70	70	70	110	110
		Sealed (VA)	9	9	9.5	14	14
		Power (W)	1.8~2.7	1.8~2.7	3~4	3~4	3~4
	Operation range	Operation voltage	(85%~110%) Us				
		Drop-out voltage	(20%~75%) Us				
	Coil voltage(50Hz,60Hz, 50/60Hz)(V)		24,36,48,110,127,220,240,380,415,440,480,500,600,660				
DC coil	Coil power(W)		9	9	11	11	11
	Operation range	Pick-up voltage	(85%~110%) Us				
		Drop-out voltage	(10%~75%) Us				
	Coil voltage (V)		24,36,48,110,220				

F4 auxiliary contact

F4 - □ □
- Number of N/C auxiliary contact
- Number of N/O auxiliary contact
- Auxiliary contact assembly

F5 auxiliary contact

F5 - □ □
- 0: time-delay range, 0.1s~3s
- 2: time-delay range, 0.1s~30s
- 4: time-delay range, 10s~180s
- T: making time-delay; D: breaking time-delay
- Time-delay module

NCF1-11C lateral side auxiliary contact

N C F 1 - 1 1 C
- Lateral side
- 1 N/C contact
- 1 N/O contact
- Design sequence No.
- Auxiliary contact assembly
- Contactor
- Company code



Z)	NC1-40(Z)	NC1-50(Z)	NC1-65(Z)	NC1-80(Z)	NC1-95(Z)
	200	200	200	200	200
	57	57	57	57	57
	6~10	6~10	6~10	6~10	6~10
			(85%~110%) Us		
			(20%~75%) Us		
			24,36,48,110,127,220,240,380,415,440,480,500,600		
	20	20	20	20	20
			(85%~110%) Us		
			(10%~75%) Us		

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Picture	Model	Configuration of contacts	
		Number of N/O contact	Number of N/C contact
	F4-20	2	0
	F4-11	1	1
	F4-02	0	2
	F4-40	4	0
	F4-31	3	1
	F4-22	2	2
	F4-13	1	3
	F4-04	0	4

Picture	Model	Time-delay range	Number of time-delay contacts
	F5-T0	0.1s~3s	N/O+N/C
	F5-T2	0.1s~30s	N/O+N/C
	F5-T4	10s~180s	N/O+N/C
	F5-D0	0.1s~3s	N/O+N/C
	F5-D2	0.1s~30s	N/O+N/C
	F5-D4	10s~180s	N/O+N/C

5.2 Derived products when the contactor is assembled with following accessory module

Derived products	Contactor	Accessorial modular	Picture
Time-delay contactor		 Time-delay block	
Reversing contactor		 Mechanical interlock	
Magnetic starter		 Thermal relay	
AC contactor for capacitor switching		 Current-limiting contact assembly	
Star-delta starter		 Time-delay block  Auxiliary contact assembly	

5.3 Assembly with thermal over-load relay

Model of contactor	Assembled thermal over-load relay			
	Model	Rated current (A)	Recommended fuse type	
			aM	gG
NC1-09 NC1-12 NC1-18	 NR2-11.5	0.1~0.16	0.25	2
		0.16~0.25	0.5	2
		0.25~0.4	1	2
		0.4~0.63	1	2
		0.63~1	2	4
		1~1.6	2	4
NC1-09 NC1-12 NC1-18	 NR2-11.5	1.25~2	4	6
		1.6~2.5	4	6
		2.5~4	6	10
		4~6	8	16
		5.5~8	12	20
		7~10	12	20
		9~13	16	25
NC1-09 NC1-12 NC1-18 NC1-25 NC1-32	 NR2-25	0.1~0.16	0.25	2
		0.16~0.25	0.5	2
		0.25~0.4	1	2
		0.4~0.63	1	2
		0.63~1	2	4
		1~1.6	2	4
		1.25~2	4	6
		1.6~2.5	4	6
		2.5~4	6	10
		4~6	8	16
		5.5~8	12	20
		7~10	12	20
		9~13	16	25
		12~18	20	35
		17~25	25	50
NC1-32	 NR2-36	23~32	40	63
		28~36	40	80
NC1-40 NC1-50 NC1-65 NC1-80 NC1-95	 NR2-93	23~32	40	63
		30~40	40	100
		37~50	63	100
		48~65	63	100
		55~70	80	125
		63~80	80	125
		80~93	100	160

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5.4 Assembly with electronic overload relay

Model of contactor	Rated		Range of setting	Recommended
	Model	Assembled thermal current (A)	Over-load relay current (A)	Fuse type
NC1-09	 NRE8-25	1.2	0.6~1.2	RT36-4 (NT00-4)
		2.4	1.2~2.4	RT36-6 (NT00-6)
		4	2~4	RT36-10 (NT00-10)
		8	4~8	RT36-16 (NT00-16)
NC1-12		10	5~10	RT36-20 (NT00-20)
		12	7~12	RT36-25 (NT00-25)
NC1-18		20	10~20	RT36-40 (NT00-40)
NC1-25		25	20~25	RT36-50 (NT00-50)
NC1-32		32	22~32	RT36-80 (NT00-80)
NC1-40	 NRE8-40	4	2~4	RT36-10 (NT00-10)
		8	4~8	RT36-16 (NT00-16)
		10	5~10	RT36-20 (NT00-20)
		20	10~20	RT36-40 (NT00-40)
		40	20~40	RT36-80 (NT00-80)
NC1-40	 NRE8-100	65	30~65	RT36-160 (NT00-160)
NC1-50				
NC1-65				
NC1-80		100	50~100	RT36-200 (NT1-200)
NC1-95				

6. Technical information

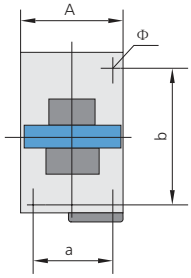
6.1 Terminal connection

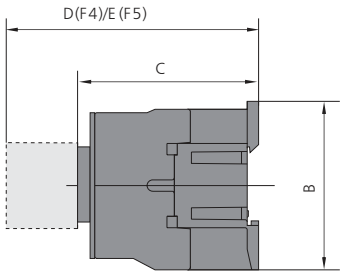
Model	Cabling cross section(Cu)				Screw size	Tightening torque (N • m)
	Number of piece	Flexible cable with cold-pressed socket (mm^2)	Flexible cable without cold-pressed socket (mm^2)	Inflexible cable (mm^2)		
NC1-09	1	1/2.5	1/4	1/4	M3.5	0.8
	2	1/2.5	1/2.5	1/4	M3.5	0.8
NC1-12	1	1/2.5	1/4	1/4	M3.5	0.8
	2	1/2.5	1’2.5	1/4	M3.5	0.8
NC1-18	1	1.5/4	1.5/6	1.5/6	M3.5	0.8
	2	1.5/4	1.5/4	1.5/6	M3.5	0.8
NC1-25	1	1.5/4	1.5/10	1.5/6	M4	1.2
	2	1.5/4	1.5/6	1.5/6	M4	1.2
NC1-32	1	2.5/6	2.5/10	2.5/10	M4	1.2
	2	2.5/6	2.5/6	2.5/10	M4	1.2
NC1-40	1	6/25	6/25	6/25	M4	3.5
	2	4/10	4/10	4/10	M8	3.5
NC1-50	1	6/25	6/25	6/25	M8	3.5
	2	4/10	4/10	4/10	M8	3.5
NC1-65	1	6/25	6/25	6/25	M8	3.5
	2	4/10	4/10	4/10	M8	3.5
NC1-80	1	10/35	10/35	10/35	M10	4.0
	2	6/16	6/16	6/16	M10	4.0
NC1-95	1	10/35	10/35	10/35	M10	4.0
	2	6/16	6/16	6/16	M10	4.0

7. Overall and mounting dimensions (mm)

NC1-09~32



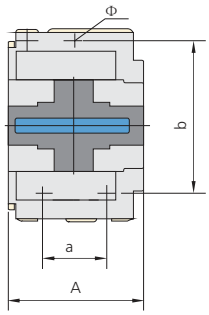


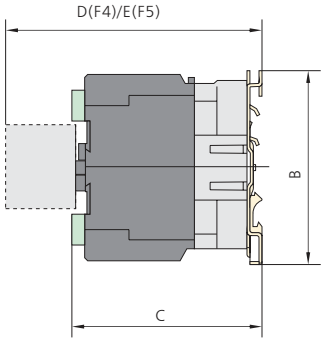


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NC1-40~95

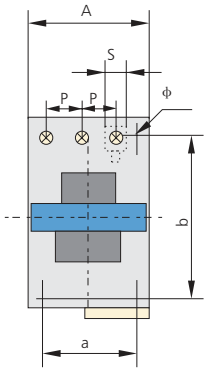


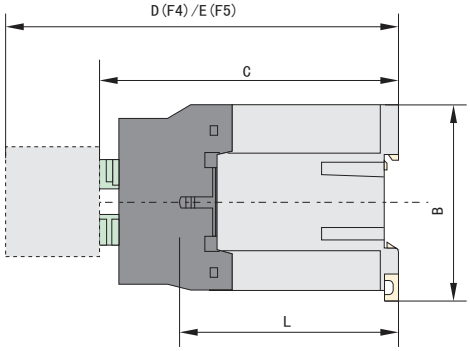




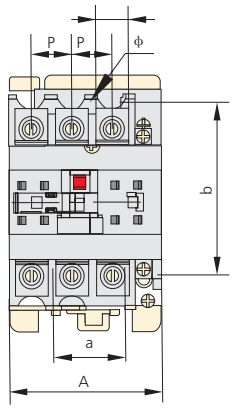
NC1-09Z~32Z

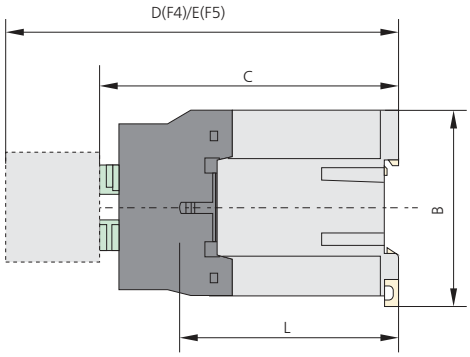






NC1-40Z~95Z





Model	A max	B max	C max	D max	E max	a	b	Φ	L	P	S
NC1-09(Z)~12(Z)	47	76	86(116)	120.5(154.5)	140.5(174.5)	34/35	50/60	4.5	60(95)	10.5	8.6
NC1-18(Z)	47	76	87(122)	125.5(160.5)	145.5(180.5)	34/35	50/60	4.5	61(96)	11.3	10.4
NC1-25(Z)	57	86	95(131)	133.5(169.5)	153.5(189.5)	40	48	4.5	70(107)	13.2	11.7
NC1-32(Z)	57	86	100(138)	138.5(176.5)	158.5(196.5)	40	48	4.5	71.6(120)	14.5	13
NC1-4011(Z)~6511(Z)	77	129	116(173)	154.5(211.5)	174.5(231.5)	40	105	6.5	78(135)	20	8.6
NC1-4004~6504	84	129	116	154.5	174.5	40	105	6.5	78(135)	20	8.6
NC1-4008~6508	84	129	127	154.5	174.5	40	105	6.5	78	20	8.6
NC1-8011(Z)~9511(Z)	87	129	127(188)	165.5(226.5)	185.5(246.5)	40	105	6.5	83(140)	23.5	12
NC1-8004~9504	96	129	122	160.5	180.5	40	105	6.5	83	23.5	12
NC1-8008~9508	96	129	135	160.5	180.5	40	105	6.5	83	23.5	12

Note:
1. L: in main circuit, the distance between terminals and plate;
2. P: in main circuit, the distance between two phases;
3. S: in main circuit, the width of contacting plate.