



## 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°C~+40°C;
- 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-□□ □□ - □

Z: DC coil Blank: AC coil

#### 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)

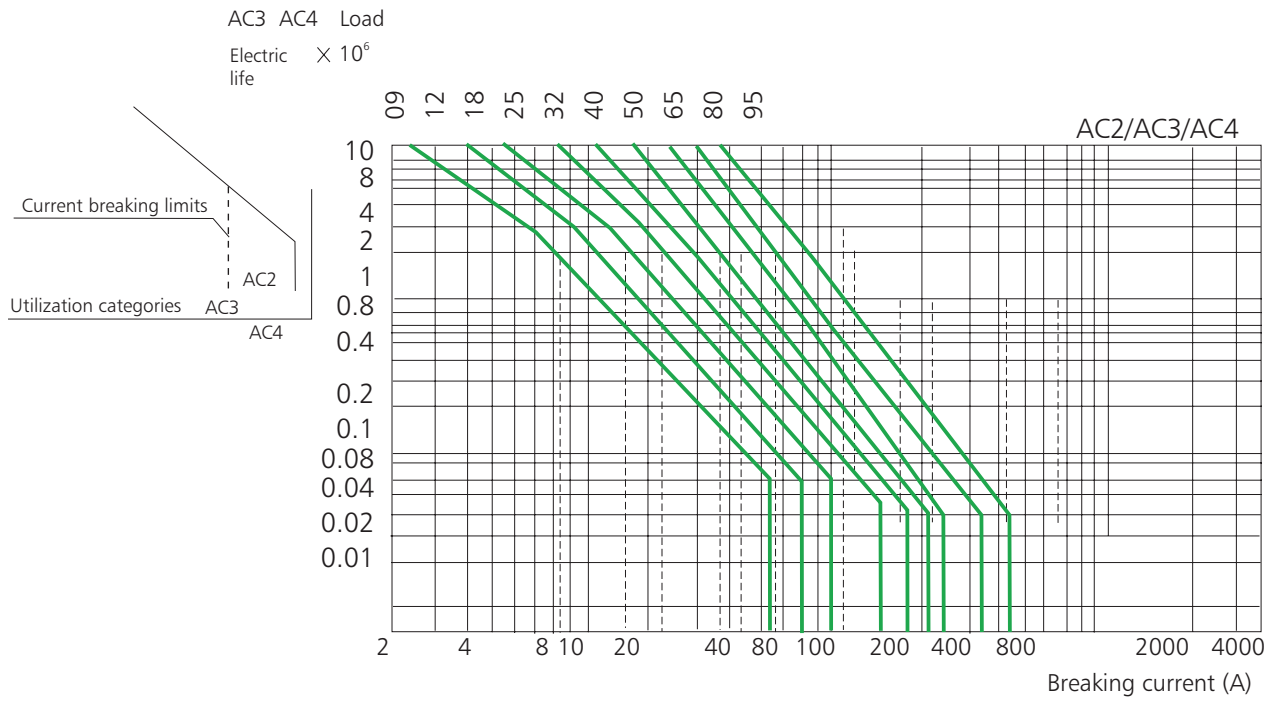
Basic specification, expressed with the rated operational current (380V/400V, AC-3)

Design sequence No.

Contactor

Company code

3. Curves



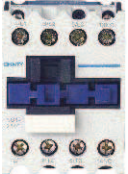


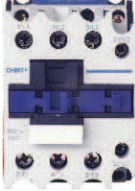

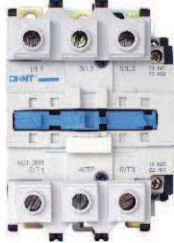
Voltage (V)	0.75	1.1	1.5	2.2	3	4	5.5	7.5	11	15	18.5	22	30	37	45	55	75	90	110	132	160	200	250	315	335	400	220	250	315		
220/230V	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(kW)
380/400V	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(kW)
440V	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-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

**4. Technical data**

4.1 AC coil contactor




★ AC coil operation




Items		Model	NC1-09	NC1-12	NC1-18	NC1-25
			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
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

### 4.2 DC coil contactor

★ DC coil operation(24V,110V,220V)

Items		Model	NC1-09Z	NC1-12Z	NC1-18Z	NC1-25Z
			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
Electrical life (× 10 <sup>3</sup> operations)	AC-3		1,000	1,000	1,000	1,000
	AC-4		200	200	200	200
Mechanical life (× 10 <sup>6</sup> operations)			10	10	10	10
Matched fuse type			RT16-20	RT16-20	RT16-32	RT16-40

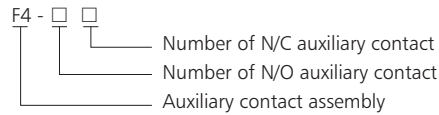
	NC1-32Z	NC1-40Z	NC1-50Z	NC1-65Z	NC1-80Z	NC1-95Z
	Frame 4 (3P)	Frame 5 (3P, 4P)			Frame 6 (3P, 4P)	
						
	50	60	80	80	95	95
	32	40	50	65	80	95
	12	18.5	24	28	37	44
	21	34	39	42	49	49
	7.5	9	12	14	17.3	21.3
	50	60	80	80	95	95
	690	690	690	690	690	690
	7.5	11	15	18.5	22	25
	15	18.5	22	30	37	45
	18.5	30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

**5. Accessories**

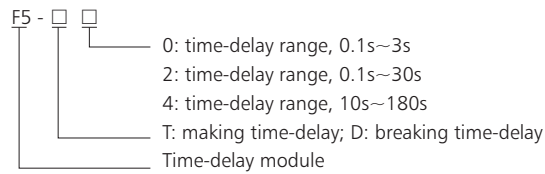
5.1 Accessories

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				

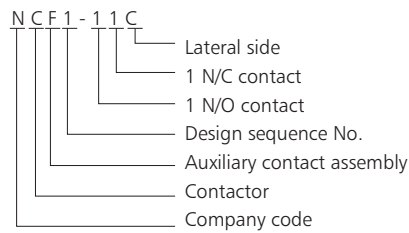
F4 auxiliary contact






F5 auxiliary contact



NCF1-11C lateral side auxiliary contact
















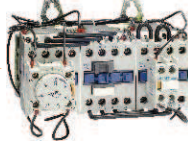


Z)	NC1-40(Z)	NC1-50(Z)	NC1-65(Z)	NC1-80(Z)	NC1-95(Z)
	200	200	200	200	200
	57	57	57	57	57
	6~10	6~10	6~10	6~10	6~10
(85%~110%) Us (20%~75%) Us					
24,36,48,110,127,220,240,380,415,440,480,500,600					
	20	20	20	20	20
(85%~110%) Us (10%~75%) Us					






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
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
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	

5.4 Assembly with electronic overload relay

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

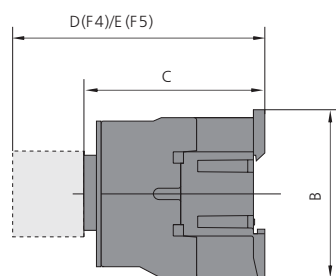
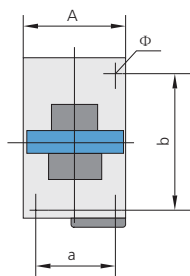
**6. Technical information**

6.1 Terminal connection

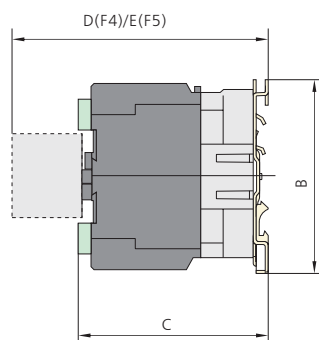
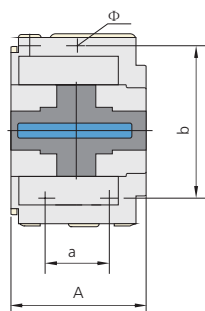
Model	Cabling cross section(Cu)				Screw size	Tightening torque (N · m)
	Number of piece	Flexible cable with cold-pressed socket (mm <sup>2</sup> )	Flexible cable without cold-pressed socket (mm <sup>2</sup> )	Inflexible cable (mm <sup>2</sup> )		
NC1-09	1	1/2.5	1/4	1/4	M3.5	0.8
	2	1/2.5	1/2.5	1/4	M3.5	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)

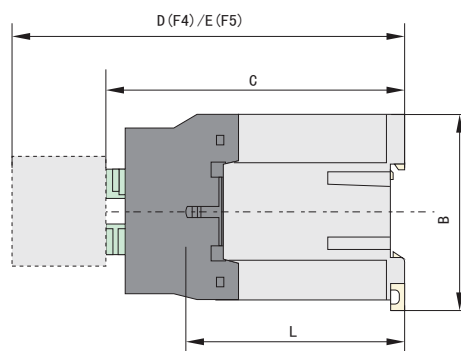
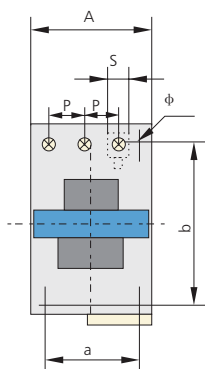
NC1-09~32

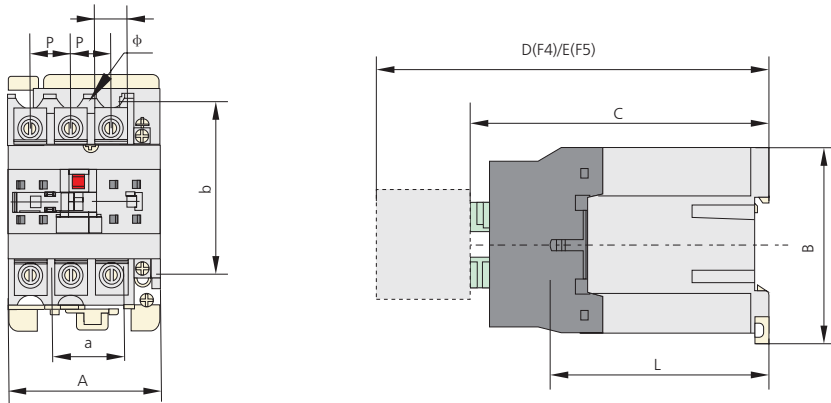


NC1-40~95



NC1-09Z~32Z





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.