NO:2020.04

CHINT ELECTRICS

NC1 Series
AC Contactor

User Instruction

Standard: IEC/EN 60947-4-1

⚠ Safety Warning

1. Only professional technicians are allowed for installation and maintenance.
2. Installation in any damp, condensed-phase environment with inflammable and explosive gas is forbidden.
3. When the product is being installed or maintained, the power must be switched off.
4. You are prohibited from touching the conductive part when the product is operating.

1 Use Purpose

NC1 series AC contactor (hereinafter referred to as contactor) is mainly used in AC 50Hz (or 60Hz) circuits with rated operating voltage up to 690V and rated operating current up to 95A under AC-3, 400(380)V application category. It is used to connect and disconnect circuits remotely, and can be used with proper thermal overload relay to act as electromagnetic starter so as to protect circuits from possible overload. The contactor is typically used for frequent start and control of AC motor.

2 Main Technical Parameters

2.1 See Table 1 for installation and operation conditions of the contactor.

2.2 See Table 2 for the main technical parameters and performance of the contactor.

Table 1 Installation and operation conditions

Installation and operation conditions	
Ambient temp. (℃)	-5℃~+40℃, average temperature should not exceed +35℃ within 24h.
Hot and humid atmospheric conditions	Relative humidity should not exceed 50% at temperature up to +40℃, higher relative humidity is allowed under lower temperature, for example, up to 90% at +20℃. User should take special measures against condensation due to temperature change.
Altitude	Not higher than 2000m
Pollution class	Class 3
Installation category	Ⅲ
Installation conditions	The angle between the installation surface and the vertical surface should not be greater than ±5°.
Impact vibration	The product should be installed and used at places free from significant shaking, shock and vibration.
Enclosure protection class	IP10

Table 2 Main technical parameters

Model			NC1-09(Z)	NC1-12(Z)	NC1-18(Z)	NC1-25(Z)	NC1-32(Z)
Rated operating current (A)	220/230V	AC-3	9	12	18	25	32
	380/400V	AC-3	9	12	18	25	32
		AC-4	3.5	5	7.7	8.5	12
	660/690V	AC-3	6.6	8.9	12	18	21
		AC-4	1.5	2	3.8	4.4	7.5
Conventional thermal current (A)			25	25	32	45	50
Rated insulation voltage (V)			690				
Rated impulse withstand voltage (kV)			8				
Power of controllable 3-phase squirrel cage motor (AC-3) (kW)		220/230V	2.2	3	4	5.5	7.5
		380/400V	4	5.5	7.5	11	15
		660/690V	5.5	7.5	10	15	18.5
Operation frequency (times/h)	Electrical life	AC-3	1200				600
		AC-4	300				
	Mechanical life		3600				
Electrical life ($\times10^4$ times)	AC-3		100				80
	AC-4		20				
Mechanical life ($\times10^4$ times)			1000				800
Model of matching fuse			RT16-25		RT16 -32	RT16 -50	
Coordination type with SCPD			Type "2" coordination		Type "1" coordination		
Cold-pressed terminals		Piece	1	2	1	2	1	2	1	2	1	2
	Non-prefabricated terminal softwire	mm^2	1/2.5	1/2.5	1/2.5	1/2.5	1.5/4	1.5/4	1.5/4	1.5/4	2.5/6	2.5/6
	With prefabricated terminal softwire		1/4	1/2.5	1/4	1/2.5	1.5/6	1.5/4	1.5/10	1.5/6	2.5/10	2.5/6
	Non-prefabricated terminal hardwire		1/4	1/4	1/4	1/4	1.5/6	1.5/6	1.5/6	1.5/6	2.5/10	2.5/10

Model			NC1-09(Z)	NC1-12(Z)	NC1-18(Z)	NC1-25(Z)	NC1-32(Z)
Terminal tightening torque (N·m)			0.8	0.8	0.8	1.2	1.2
AC coil power	50Hz	Pick-up (VA)	70	70	70	110	110
		Hold (VA)	9	9	9.5	14	14
	Power (W)		1.8~2.7	1.8~2.7	3~4	3~4	3~4
DC coil power			9	9	11	11	11
Operation range			Pick-up voltage: (85%~110%)Us Release voltage: (20%~75%)Us DC : (10%~75%)Us				
Auxiliary contacts	Basic parameters		AC-15: Ie:1.5A Ue:380/400/415V DC-13: Ie:0.3A Ue:220/230/240/250V Ith: 10A				
	Combinations		F4 2 groups				F4 4 groups
			F4-20	F4-11	F4-02		F4-40
	Combinations		F5-T				
			F5-T0		F5-T2		F5-T4
	Combinations		NCF1-11C				

Continued Table 2

Model			NC1-40(Z)	NC1-50(Z)	NC1-65(Z)	NC1-80(Z)	NC1-95(Z)
Rated operating current (A)	220/230V	AC-3	40	50	65	80	95
	380/400V	AC-3	40	50	65	80	95
		AC-4	18.5	24	28	37	44
	660/690V	AC-3	34	39	42	49	49
		AC-4	9	12	14	17.3	21.3
Conventional thermal current (A)			60	80	80	110	110
Rated insulation voltage (V)			690				
Rated impulse withstand voltage (kV)			8				
Power of controllable 3-phase squirrel cage motor (AC-3) (kW)		220/230V	11	15	18.5	22	25
		380/400V	18.5	22	30	37	45
		660/690V	30	37	37	45	45

Model			NC1-40(Z)		NC1-50(Z)		NC1-65(Z)		NC1-80(Z)		NC1-95(Z)	
Operation frequency (times/h)	Electrical life	AC-3	600									
		AC-4	300									
	Mechanical life		3600									
Electrical life ($\times 10^4$ times)	AC-3		80		60							
	AC-4		15						10			
Mechanical life ($\times 10^4$ times)			800						600			
Model of matching fuse			RT16-63		RT16-80				RT16-125			
Coordination type with SCPD			Type “1” coordination									
Cold-pressed terminals		Piece	1	2	1	2	1	2	1	2	1	2
	Non-prefabricated terminal softwire	mm^2	6/25	4/10	6/25	4/10	6/25	4/10	10/35	6/16	10/35	6/16
	With prefabricated terminal softwire		6/25	4/10	6/25	4/10	6/25	4/10	10/35	6/16	10/35	6/16
	Non-prefabricated terminal hardwire		6/25	4/10	6/25	4/10	6/25	4/10	10/35	6/16	10/35	6/16
Terminal tightening torque (N·m)			6.0		6.0		6.0		⊖ 6.0 ⬡ 10.0			
AC coil power	50Hz	Pick-up (VA)	300		300		300		300		300	
		Hold (VA)	57		57		57		57		57	
DC coil power	Power (W)		6~10		6~10		6~10		6~10		6~10	
			20		20		20		20		20	
Operation range			Pick-up voltage:(85%~110%)Us Release voltage:(20%~75%)Us DC:(10%~75%)Us									
Auxiliary contacts	Basic parameters		AC-15: Ie:1.5A Ue:380/400/415V DC-13: Ie:0.3A Ue:220/230/240/250V Ith: 10A									
	Combinations		F4 4 groups									
			F4-31		F4-22		F4-13				F4-04	
	Combinations		F5-D									
			F5-D0				F5-D2				F5-D4	
	Combinations		NCF1-11C									

3 Installation

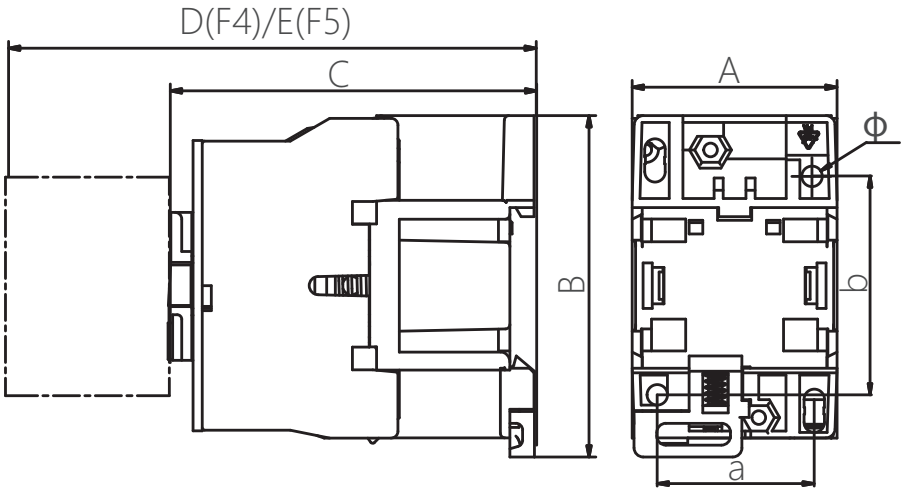

Figure 1 NC1-09(Z)-32(Z)

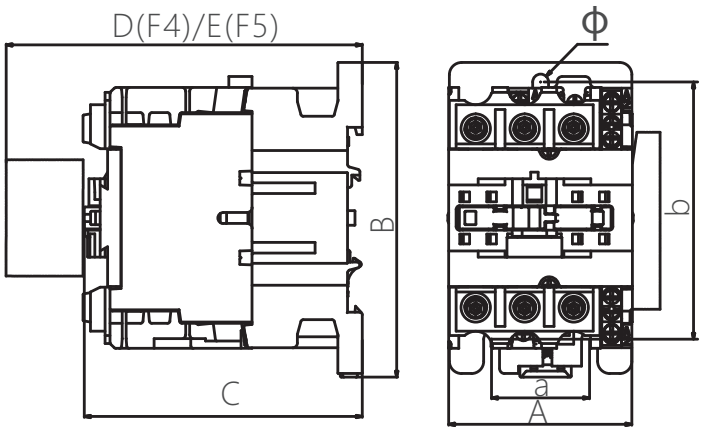

Figure 2 NC1-40(Z)-95(Z)

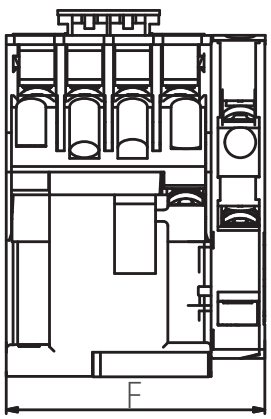

Figure 3 NC1-09-32

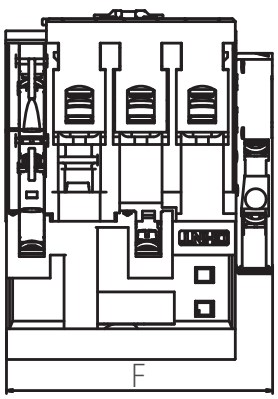

Figure 4 NC1-40-95

Table 3 Overall and installation dimensions of contactor Unit:mm

Model	NC1-09(Z)~12(Z)	NC1-18(Z)	NC1-25(Z)	NC1-32(Z)	NC1-4011(Z)~6511(Z)	NC1-4004~6504	NC1-4008~6508	NC1-8011(Z)~9511(Z)	NC1-8004~9504	NC1-8008~9508
Amax	47	47	57	57	77	84	84	87	96	96
Bmax	76	76	86	86	129	129	129	129	129	129
Cmax	82 (116)	87 (122)	95 (131)	100 (138)	116 (173)	116	127	127 (188)	122	135
Dmax	120.5 (154.5)	125.5 (160.5)	133.5 (169.5)	138.5 (176.5)	154.5 (211.5)	154.5	154.5	165.5 (226.5)	160.5	160.5
Emax	140.5 (174.5)	145.5 (180.5)	153.5 (189.5)	158.5 (196.5)	174.5 (231.5)	174.5	174.5	185.5 (246.5)	180.5	180.5
Fmax	59.5	59.5	69.5	69.5	89.5	96.5	96.5	99.5	108.5	108.5
a	34/35		40	40	40	40	40	40	40	40
b	48/50/60		48	48	105	105	105	105	105	105
Φ	4.5	4.5	4.5	4.5	6.5	6.5	6.5	6.5	6.5	6.5

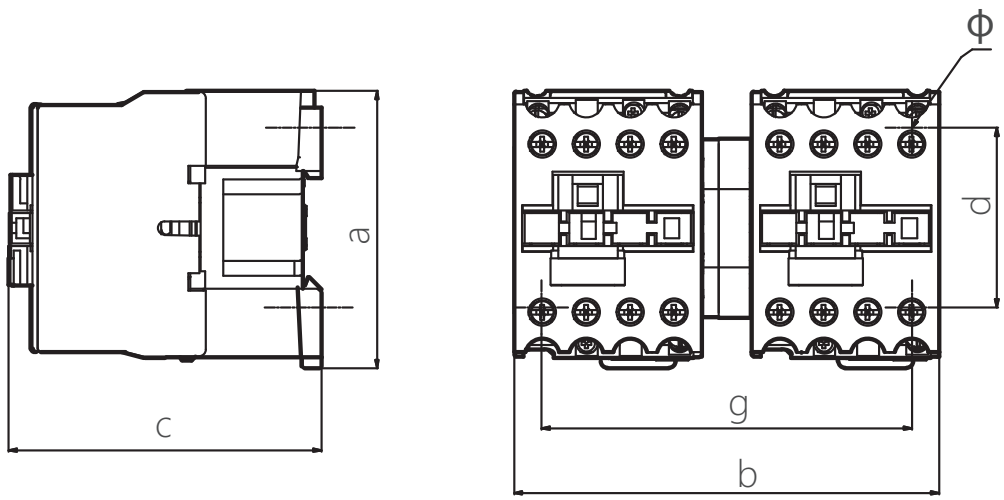

Figure 5 NC1-09~32N

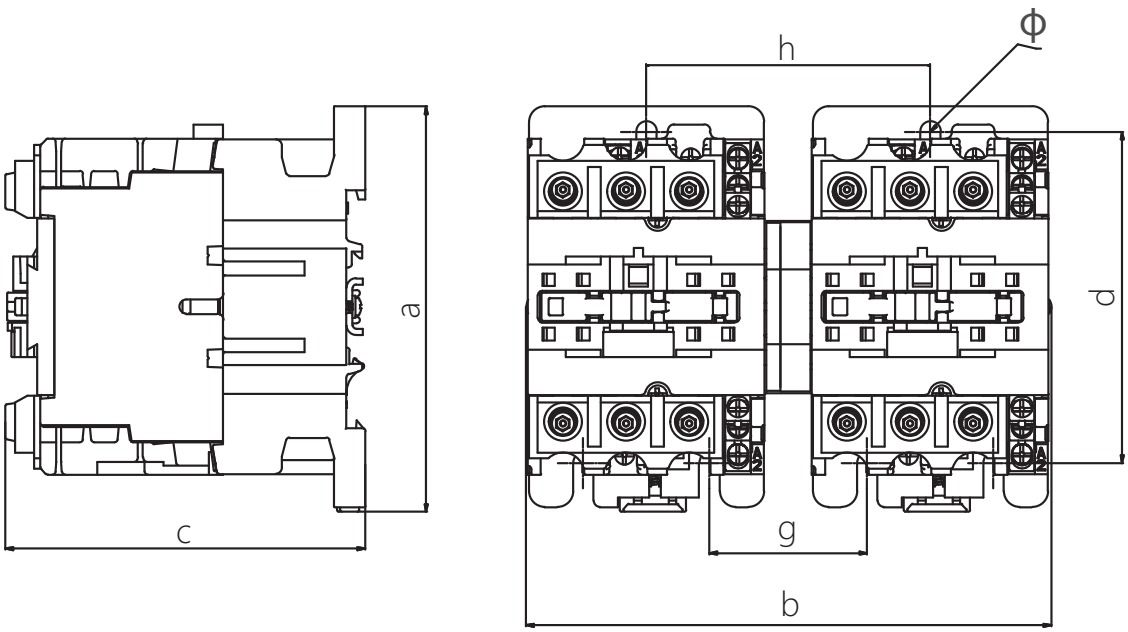

Figure 6 NC1-09~32N

Table 4 Overall and installation dimensions of contactor Unit:mm

Model	NC1-09~12N	NC1-18N	NC1-25N	NC1-32N	NC1-4011~6511N	NC1-4004~6504N	NC1-8011~9511N	NC1-8004~9504N
a	86	86	93	93	129	129	129	129
b	109	109	131	131	165	180	187	205
c	82	87	95	100	116	116	127	127
d	50/60	50/60	50/60	50/60	105	105	105	105
g	95	95	111	111	50	50	57	57
h	-	-	-	-	90	90	96	96
Φ	4.5	4.5	4.5	4.5	6.5	6.5	6.5	6.5

4 Maintenance

Please check if the contactor can operate reliably every month. Method: Check if the contactor inclines 5° forward upon pick-up and inclines 5° backward upon release.

Conduct maintenance every month. **Note: Do not disassemble, assemble and repair the product at will. Replace the product if it is found to be damaged.**

Table 5 Analysis and Troubleshooting of Faults

Symptoms	Cause analysis	Troubleshooting method
The product does not operation or does not operate reliably	Inconsistency between control power voltage and coil voltage.	Use control power supply that complies with coil voltage.
	Insufficient operation circuit power capacity or disconnection or wrong connection exists in the circuit.	Check the circuit to ensure correct connection.
	Coil burnt; mechanical movable parts jammed.	Replace the coil, remove foreign objects or replace the product.
Noise	There are foreign objects on the polar face of magnet yoke or armature.	Clean the polar face of the iron core
	The voltage of control power is too low.	Use control power supply that complies with coil voltage.
The product does not release or release slowly	Contact welding	Replace the product
	There is oil or dust on the polar face of the iron core.	Clean the polar face of the iron core

5 Environmental Protection

In order to protect the environment, the product or product parts should be disposed of according to the industrial waste treatment process, or be sent to the recycling station for assortment, dismantling and recycling according to local regulations.

CHINT

QC PASS

NC1 Series
AC Contactor
IEC/EN 60947-4-1

Check 02

Test date: Please see the packing

ZHEJIANG CHINT ELECTRICS CO.,LTD.

CHINT ELECTRICS

NC1 Series
AC Contactor
User Instruction

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