

Safety Warning

- Only professional technicians are allowed for installation and maintenance.
- Installation in any damp, condensed-phase environment with inflammable and explosive gas is forbidden.
- When the product is being installed or maintained, the power must be switched off.
- 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

- See Table 1 for installation and operation conditions of the contactor.
- 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. (°C) | -5°C~+40°C, average temperature should not exceed +35°C within 24h. |
| Hot and humid atmospheric conditions | Relative humidity should not exceed 50% at temperature up to +40°C, higher relative humidity is allowed under lower temperature, for example, up to 90% at +20°C. 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 |

01

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 | | | | | | | | | | |
| | AC-4 | 300 | | | | | | | | | | |
| Mechanical life | | 3600 | | | | | | | | | | |
| Electrical life (×10 ⁴ times) | AC-3 | 100 | | | | 80 | | | | | | |
| | AC-4 | 20 | | | | | | | | | | |
| Mechanical life (×10 ⁴ times) | | 1000 | | | | 800 | | | | | | |
| Model of matching fuse | | RT16-20 | RT16-32 | RT16-40 | RT16-50 | | | | | | | |
| Coordination type with SCPD | | Type "2" coordination | | | | | | | | | | |
| Cold-pressed terminals | Non-prefabricated terminal software | Piece | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 |
| | mm ² | 1/2.5 | 1/2.5 | 1/2.5 | 1/5/4 | 1/5/4 | 1/5/4 | 1/5/4 | 1/5/4 | 1/5/4 | 1/5/4 | 2/5/6 |
| Cold-pressed terminals | With prefabricated terminal software | mm ² | 1/4 | 1/2.5 | 1/4 | 1/2.5 | 1/5/6 | 1/5/4 | 5/10 | 1/5/6 | 2/5/10 | 2/5/6 |
| | Non-prefabricated terminal hardware | mm ² | 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 |

02

| 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 | |
| DC coil power | Power W | 1.8~2.7 | 1.8~2.7 | 3~4 | 3~4 | 3~4 | |
| | | 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: Ie0.95A Ue380/400V DC-13: Ie0.15A Ue220/250V Ith: 10A | | | | |
| | Combinations | | F4-20 groups F4-4 groups | | | | |
| | Combinations | | F4-20 F4-11 F4-02 F4-40 | | | | |
| | Combinations | | F5-T0 F5-T2 F5-T4 | | | | |

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 |

03

| 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 (×10 ⁴ times) | AC-3 | 80 | 60 | | | | | | | | | |
| | AC-4 | 15 | | | 10 | | | | | | | |
| Mechanical life (×10 ⁴ times) | | 800 | | | 600 | | | | | | | |
| Model of matching fuse | | RT16-63 | RT16-80 | RT16-100 | RT16-125 | | | | | | | |
| Coordination type with SCPD | | Type "2" coordination | | | | | | | | | | |
| Cold-pressed terminals | Non-prefabricated terminal software | Piece | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | | |
| | mm ² | 6/25 | 4/10 | 6/25 | 4/10 | 6/25 | 4/10 | 10/35 | 6/16 | 10/35 | 6/16 | |
| Cold-pressed terminals | With prefabricated terminal software | mm ² | 6/25 | 4/10 | 6/25 | 4/10 | 6/25 | 4/10 | 10/35 | 6/16 | 10/35 | 6/16 |
| | Non-prefabricated terminal hardware | mm ² | 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 | | | | | | | |
| 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: Ie0.95A Ue380/400V DC-13: Ie0.15A Ue220/250V Ith: 10A | | | | | | | | | |
| | Combinations | | F4-4 groups | | | | | | | | | |
| | Combinations | | F4-31 F4-22 F4-13 F4-04 | | | | | | | | | |
| | Combinations | | F5-D0 F5-D2 F5-D4 | | | | | | | | | |
| Combinations | | NCF1-11C | | | | | | | | | | |

04

3 Installation

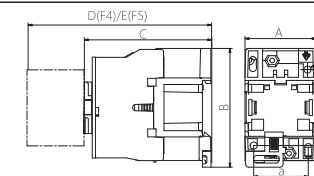


Figure 1 NC1-09(Z)-32(Z)

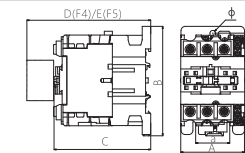


Figure 2 NC1-40(Z)-95(Z)

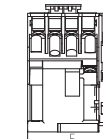


Figure 3 NC1-09-32

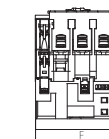


Figure 4 NC1-40-95

05

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) | NC1-8004~8504 | 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 | 87 | 95 | 100 | 116 | 116 | 127 | 127 | 122 | 135 |
| Dmax | 120.5 | 125.5 | 133.5 | 138.5 | 154.5 | 154.5 | 165.5 | 165.5 | 160.5 | 160.5 |
| | (154.5) | (160.5) | (169.5) | (176.5) | (211.5) | | (226.5) | (226.5) | | |
| Emax | 140.5 | 145.5 | 153.5 | 158.5 | 174.5 | 174.5 | 185.5 | 185.5 | 180.5 | 180.5 |
| | (174.5) | (180.5) | (189.5) | (196.5) | (231.5) | (246.5) | | | | |
| 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 |

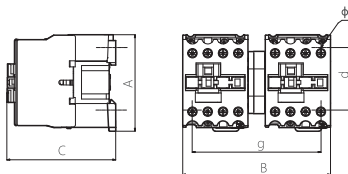


Figure 5 NC1-09~32N

06

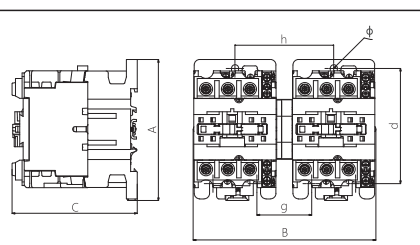


Figure 5 NC1-09~32N

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 | NC1-8011~9504N |
|-------|------------|---------|---------|---------|----------------|----------------|----------------|
| a | 86 | 86 | 93 | 93 | 129 | 129 | 129 |
| b | 109 | 109 | 131 | 131 | 165 | 180 | 187 |
| c | 82 | 87 | 95 | 100 | 116 | 116 | 127 |
| d | 50/60 | 50/60 | 50/60 | 50/60 | 105 | 105 | 105 |
| g | 95 | 95 | 111 | 111 | 50 | 50 | 57 |
| h | - | - | - | - | 90 | 90 | 96 |
| φ | 4.5 | 4.5 | 4.5 | 4.5 | 6.5 | 6.5 | 6.5 |

07

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 operate 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. |
| Noise | Coil burnt; mechanical movable parts jammed. | Replace the coil, remove foreign objects or replace the product. |
| | There are foreign objects on the polar face of magnet yoke or armature. | Clean the polar face of the iron core |
| The product does not release or release slowly | The voltage of control power is too low. | Use control power supply that complies with coil voltage. |
| | 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.

08

CHNT
QC PASS

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

Check 02

Test date: Please see the packing

ZHEJIANG CHINT ELECTRICS CO., LTD.

09

CHNT
CHINT ELECTRICS

NC1 Series
AC Contactor
User Instruction

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(NO:2020.04)

CHNT
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NC1 Series
AC Contactor

User Instruction

Standard: IEC/EN 60947-4-1