



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

NC 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)

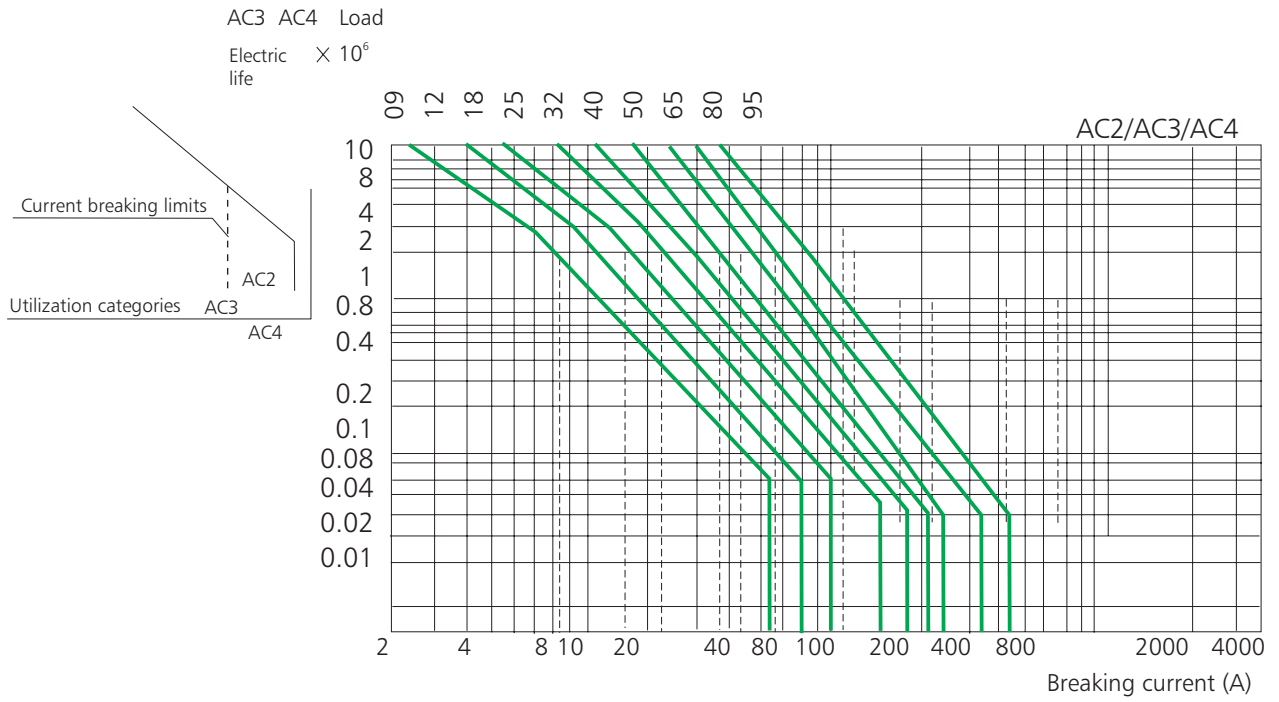
Basic specification, expressed with the rated operational current (380V/400V, AC-3)

Design sequence No.

Contactor

Company code

3. Curves






| Utilization Category | 09 | 12 | 18 | 25 | 32 | 40 | 50 | 65 | 80 | 95 |
|----------------------|------|-----|-----|-----|----|-----|-----|-----|----|----|
| 220/230V | 0.75 | 1.1 | 1.5 | 2.2 | 3 | 4 | 5.5 | 7.5 | 11 | 15 |
| 380/400V | 1.1 | 1.5 | 2.2 | 3 | 4 | 5.5 | 7.5 | 11 | 15 | 22 |
| 440V | 1.1 | 1.5 | 2.2 | 3 | 4 | 5.5 | 7.5 | 11 | 15 | 22 |






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 |

D

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 | 3,600 |
| Electrical life (× 10 ³ operations) | AC-3 | | 1,000 | 1,000 | 1,000 | 1,000 |
| | AC-4 | | 200 | 200 | 200 | 200 |
| Mechanical life (× 10 ⁶ operations) | | | 10 | 10 | 10 | 10 |
| Matched fuse type | | | RT16-20 | RT16-20 | RT16-32 | RT16-40 |

| | NC1-32Z Frame 4 (3P) | NC1-40Z | NC1-50Z | NC1-65Z | NC1-80Z | NC1-95Z |
|--|---|------------------|---|---------|---|----------|
| | | 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 |

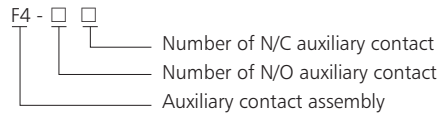
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5. Accessories

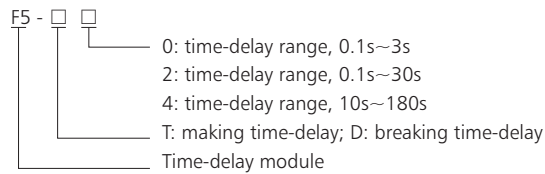
5.1 Accessories

| 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 | | | | |

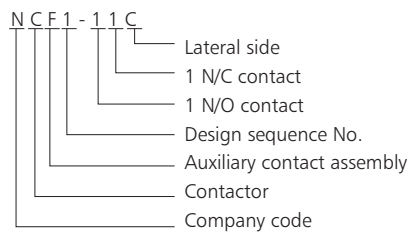
F4 auxiliary contact



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 |

D

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 |
| | | 9~13 | 16 | 25 |
| 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) |
| NC1-18 | NRE8-25 | 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 | |  | 4 | 2~4 |
| | 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 | | | | |

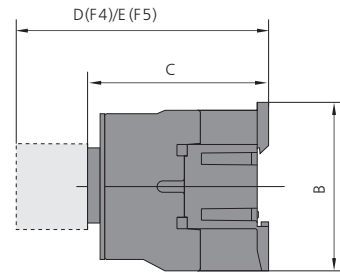
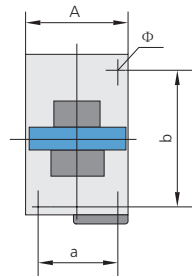
6. Technical information

6.1 Terminal connection

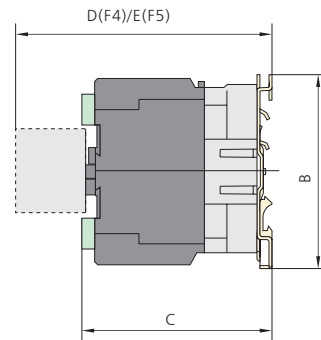
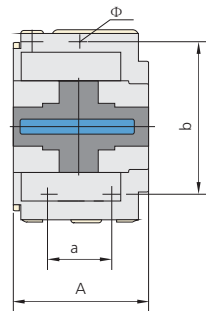
| Model | Cabling cross section(Cu) | | | | Screw size | Tightening torque (N · m) |
|--------|---------------------------|--|---|-------------------------------------|------------|---------------------------|
| | Number of piece | Flexible cable with cold-pressed socket (mm ²) | Flexible cable without 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)

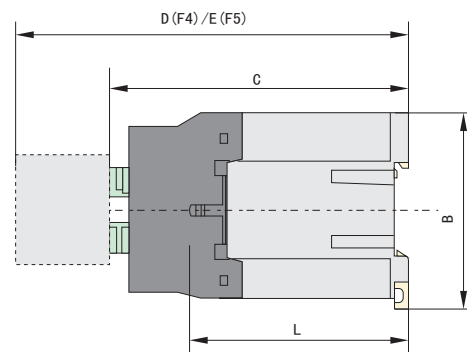
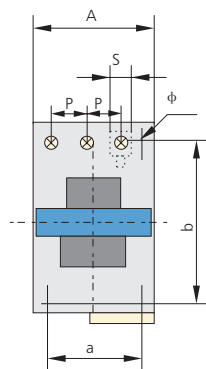
NC1-09~32

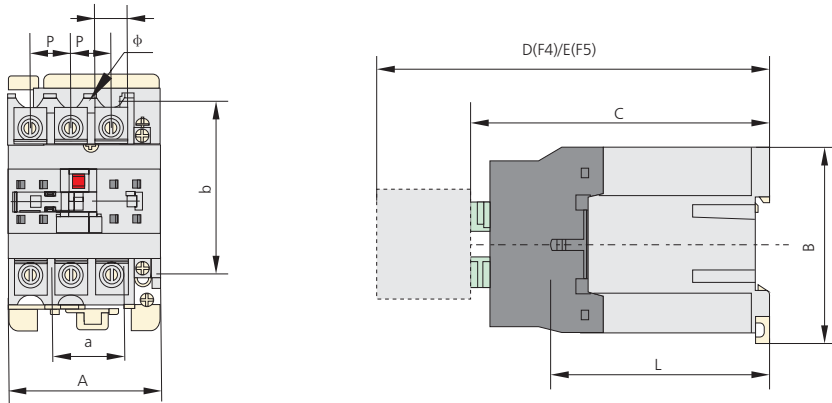


NC1-40~95



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.