

# DB ELECTRO<sup>CO., LTD.</sup>

Présente / Presents:




NINGBO HUAGUAN ELECTRONICS CO., LTD.



# NT90 (T90)



30.5 × 24.2 × 17 32.5 × 27.6 × 20.5

 03001003503  E9930952E01  
 E160644  R2033977  
 Patent No.: 95213824.7 99218304.9  
 99312549.2 01311661.4 02110881.1



| Features   |  |
|--|--|
| <ul style="list-style-type: none"> <li>• Small size, light weight. Low coil power consumption, heavy contact load. Strong anti-shock and anti-vibration, high reliability, long life.</li> <li>• PC board mounting.</li> <li>• Suitable for automobile, machine, electronic equipment, air conditioner and household appliances applications.</li> </ul> |  |

| Ordering Information  |  |
|---|--|
| <b>NT90 R H A S DC12V C B 0.9</b><br>1 2 3 4 5 6 7 8 9  |  |
| 1 Part number: NT90(T90)<br>2 Terminal: R: without Pin6; NIL: With Pin6<br>3 Load: H:30A; N:40A<br>4 Contact arrangement: 1A:1A; 1B:1B; 1C:1C<br>5 Enclosure: S: Sealed type; D: Dust cover; E: Covered; O: Open type | 6 Coil rated voltage(V): AC:12,24,110,120,220<br>DC:3,5,6,9,12,15,18,24,48,110<br>7 Contact material: C: AgCdO; S: AgSnO <sub>2</sub> ; I: AgSnO <sub>2</sub> In <sub>2</sub> O <sub>3</sub><br>8 Resist heatclass: B:130℃ F:155℃<br>9 Coil power consumption: 0.6:0.6W; 0.9:0.9W<br>NIL:2VA |

| Contact Data                       |   |
|------------------------------------|---|
| Contact Arrangement                | 1A (SPSTNO) 1B(SPSTNC) 1C(SPDT(B-M))  |
| Contact Material                   | AgCdO AgSnO <sub>2</sub> AgSnO <sub>2</sub> In <sub>2</sub> O <sub>3</sub>  |
| Contact Rating (resistive)         | NO:30A/240VAC,14VDC; NC:20A/240VAC;30A/14VDC<br>NO:40A/250VAC,30VDC; NC:30A/250VAC,30VDC (0.9W)<br>NO:30A/277VAC;NC:20A/277VAC<br>Motor load: 2HP 250VAC; 1.5HP 250V<br>Lamp load: TV-5 |
| Max. Switching Power               | 1100W 7200VA  |
| Max. Switching Voltage             | 110VDC 250VAC Max. Switching Current:40A  |
| Contact Resistance or Voltage drop | ≤ 30mΩ Item 3.12 of IEC255-7  |
| Operation life                     | Electrical 10 <sup>9</sup> Item 3.30 of IEC255-7  |
|                                    | Mechanical 10 <sup>7</sup> Item 3.31 of IEC255-7  |

| Coil Parameter    |                   |      |                  |                         |  |  |            |                 |                 |
|-------------------|-------------------|------|------------------|-------------------------|--|--|------------|-----------------|-----------------|
| AC Coil Parameter |                   |      |                  |                         |  |  |            |                 |                 |
| Dash numbers      | Rated voltage VAC |      | Rated current mA | Coil resistance Ω ± 10% | Pick up voltage VAC(max) (75%of rated voltage) | Release voltage VAC(min) (30%of rated voltage) | Coil power | Operate Time ms | Release Time ms |
|                   | Rated             | Max  |                  |                         |  |  |            |                 |                 |
| 012AC             | 12                | 15.6 | 187              | 27                      | 9.0  | 3.6  | 2VA        | —               | —               |
| 024AC             | 24                | 31.2 | 95               | 120                     | 18.0   | 7.2  |            |                 |                 |
| 110AC             | 110               | 143  | 20               | 2360                    | 82.5   | 33.0   |            |                 |                 |
| 120AC             | 120               | 156  | 16.5             | 3040                    | 90.0   | 36.0   |            |                 |                 |
| 220AC             | 220               | 286  | 6.4              | 13490                   | 165.0  | 66.0   |            |                 |                 |

**CAUTION:** 1.The use of any coil voltage less than the rated coil voltage will compromise the operation of the relay.  
 2.Pickup and release voltage are for test purposes only and are not to be used as design criteria.

## Coil Parameter

| DC Coil Parameter |                 |      |                                   |  |  |              |                 |                 |
|-------------------|-----------------|------|-----------------------------------|--|--|--------------|-----------------|-----------------|
| Dash numbers      | Rated voltage V |      | Coil resistance $\Omega \pm 10\%$ | Pick up voltage V(max) (75%of rated voltage) | Release voltage V(min) (10%of rated voltage) | Coil power W | Operate Time ms | Release Time ms |
|                   | Rated           | Max  |                                   |  |  |              |                 |                 |
| 003-900           | 3               | 3.9  | 10                                | 2.25   | 0.3  | 0.9          | <15             | <10             |
| 005-900           | 5               | 6.5  | 28                                | 3.75   | 0.5  |              |                 |                 |
| 006-900           | 6               | 7.8  | 40                                | 4.50   | 0.6  |              |                 |                 |
| 009-900           | 9               | 11.7 | 90                                | 6.75   | 0.9  |              |                 |                 |
| 012-900           | 12              | 15.6 | 160                               | 9.00   | 1.2  |              |                 |                 |
| 015-900           | 15              | 19.5 | 250                               | 10.25  | 1.5  |              |                 |                 |
| 018-900           | 18              | 23.4 | 360                               | 13.50  | 1.8  |              |                 |                 |
| 024-900           | 24              | 31.2 | 640                               | 18.00  | 2.4  |              |                 |                 |
| 048-900           | 48              | 62.4 | 2560                              | 36.00  | 4.8  |              |                 |                 |
| 110-900           | 110             | 143  | 13445                             | 82.50  | 11.0   |              |                 |                 |
|                   |                 |      |                                   |  |  |              |                 |                 |
| 003-600           | 3               | 3.9  | 15                                | 2.25   | 0.3  | 0.6          | <15             | <10             |
| 005-600           | 5               | 6.5  | 42                                | 3.75   | 0.5  |              |                 |                 |
| 006-600           | 6               | 7.8  | 60                                | 4.50   | 0.6  |              |                 |                 |
| 009-600           | 9               | 11.7 | 135                               | 6.75   | 0.9  |              |                 |                 |
| 012-600           | 12              | 15.6 | 240                               | 9.00   | 1.2  |              |                 |                 |
| 015-600           | 15              | 19.5 | 375                               | 10.25  | 1.5  |              |                 |                 |
| 018-600           | 18              | 23.4 | 540                               | 13.50  | 1.8  |              |                 |                 |
| 024-600           | 24              | 31.2 | 960                               | 18.00  | 2.4  |              |                 |                 |
| 048-600           | 48              | 62.4 | 3840                              | 36.00  | 4.8  |              |                 |                 |
| 110-600           | 110             | 143  | 20167                             | 82.50  | 11.0   |              |                 |                 |

**CAUTION:** 1.The use of any coil voltage less than the rated coil voltage will compromise the operation of the relay.  
2.Pickup and release voltage are for test purposes only and are not to be used as design criteria.

### Operation condition

|                          |  |                             |
|--------------------------|--|-----------------------------|
| Insulation Resistance    | 1000M $\Omega$ min (at 500VDC)                     | Item 7 of IEC255-5          |
| Dielectric Strength      |  |                             |
| Between contacts         | 50Hz 1500V   | Item 6 of IEC255-5          |
| Between contact and coil | 50Hz 2500V 4000V (without Pin 6)                   | Item 6 of IEC255-5          |
| Shock resistance         | 200m/s <sup>2</sup> 11ms                           | IEC68-2-27 Test Ea          |
| Vibration resistance     | 10~55Hz double amplitude 1.5mm                     | IEC68-2-6 Test Fc           |
| Terminals strength       | 10N  | IEC68-2-21 Test Ua1         |
| Solderability            | 235 $^{\circ}$ C $\pm$ 2 $^{\circ}$ C 3 $\pm$ 0.5s | IEC68-2-20 Test Ta method 1 |
| Ambient Temperature      | -55~100 $^{\circ}$ C -55~125 $^{\circ}$ C          |                             |
| Relative Humidity        | 85% (at 40 $^{\circ}$ C)                           | IEC68-2-3 Test Ca           |
| Mass                     | 27g ( Open type) 30g                               |                             |

### Qualification inspection:

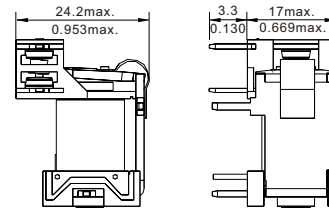
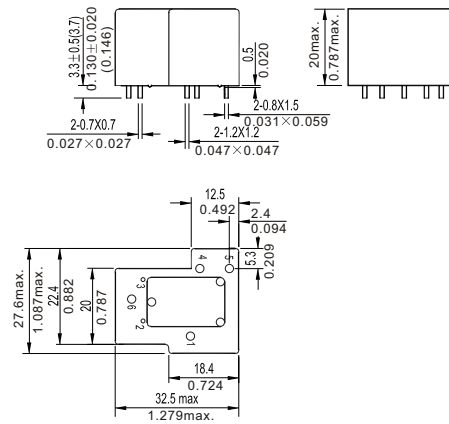
Perform the qualification test as specified in the table IV of IEC255-19-1 and minimum sample size 24.

## Safety approvals

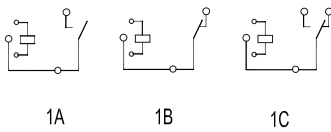
| Safety approval | UL&CUR   | TüV  | CQC                            |
|-----------------|--|--|--------------------------------|
| Load            | NO:40A/240VAC 30A/277VAC<br>NC:30A/240VAC 20A/277VAC<br>2 HP 250VAC TV-5<br>1½-HP 250VAC<br>HP:A 1HP/16AFLA/120VAC<br>2HP/12AFLA/240VAC<br>B 30LRA/10AFLA/120VAC<br>30LRA/10AFLA/240VAC<br>Insulation : B-class<br>F-class | NO:40A/240VAC 14VDC<br>NC:30A/240VAC 14VDC<br>Insulation: B-class<br>F-class | NO:30A/240VAC<br>NC:20A/240VAC |

## Dimensions

mm /inch

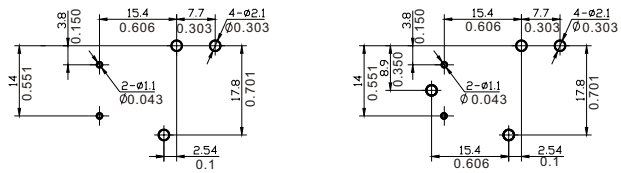


Open type



Wiring diagram(Bottom view)

## Dimensions



Mounting (Bottom view)

NOTES 1).Dimensions are in millimeters.  
2).Inch equivalents are given for general information only.

## Reference Data

