

# NT90 (T90)



30.5×24.2×17

32.5×27.6×20.5

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CE E9930952E01

CANUS E160644

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Patent No. 95213824.7

99218304.9

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## Features

- Small size, light weight. Low coil power consumption, heavy contact load. Strong anti-shock and anti-vibration, high reliability, long life.
- Suitable for automobile, machine, electronic equipment, air conditioner and household appliance applications.
- PC board mounting.

## Ordering Information

**NT90 R H A S DC12V C B 0.9**

1 2 3 4 5 6 7 8 9

- |  |   |
|--|---|
| 1 Part number: NT90T、NT90T <sub>2</sub>                              | 6 Coil rated Voltage(V): AC:12,24,110,120,220           |
| 2 Terminal: R: without Pin 6; NIL: With Pin 6                        | DC:3,5,6,9,12,15,18,24,48,110                           |
| 3 Load: H:30A; N:40A   | 7 Contact material: C: Ag-CdO; S: Ag-SnO <sub>2</sub>   |
| 4 Contact arrangement: 1A:1A; 1B:1B; 1C:1C                           | 8 Resist heat class: B:130°C F:155°C                    |
| 5 Enclosure: S: Sealed type; D: Dust cover; E: Covered; O: Open type | 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	Ag-CdO Ag-SnO <sub>2</sub> Ag-SnO <sub>2</sub> -In <sub>2</sub> O <sub>3</sub>
Contact Rating (resistive)	NO : 30A/240VAC,14VDC; NC:20A/240VAC ;30A/14VDC NO: 40A/250VAC,30VDC; NC:30A/250VAC,30VDC (0.9W)
	Motor load: 2HP 250VAC ; 1.5HP 250V
	Lamp load: TV-5
Max. Switching Power	1100W 7200VA
Max. Switching Voltage	110VDC 250VAC
Contact Resistance or Voltage drop	≤30mΩ
Operation life	Electrical 10 <sup>5</sup> Mechanical 10 <sup>7</sup>
	Max. Switching Current:40A Item 3.12 of IEC255-7 Item 3.30 of IEC255-7 Item 3.31 of IEC255-7

## Coil Parameter

AC Coil Parameter								
DASH NUMBERS	RATED VOLTAGE VAC		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	27	9.0	3.6	2VA	—	—
024AC	24	31.2	120	18.0	7.2			
110AC	110	143	2360	82.5	33.0			
120AC	120	156	3040	90.0	36.0			
220AC	220	286	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 VDC		COIL RESISTANCE $\Omega \pm 10\%$	PICK UP VOLTAGE VDC(max) (75%of rated voltage)	RELEASE VOLTAGE VDC(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	$\leq 15$	$\leq 10$
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			
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.  
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**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	TüV	CCEE
Load	No:40A/250VAC 30A/277VAC Nc:30A/250VAC 20A/277VAC 2HP 250VAC TV-5 11/2HP 250VAC Insulation: B-class F-class	No 40A/240VAC 14VDC Nc 30A/240VAC 14VDC Insulation: B-class F-class	No 30A/240VAC Nc 20A/240VAC

**Dimensions (Unit: mm)**

The technical drawings include:
 

- Top and side views of the relay with dimensions such as 12.5, 5.3, 18.4 max, 20, 22.4, 27.6, 0.5, 2-0.8X1.5, 2-1.2X1.2, 3.3±0.5, 20, 2-0.7X0.7, 7.7, 3-φ2.1, 17.8, 2.54, 4-φ2.1, 15.4, 7.7, 17.8, 2.54, 15.4, 3.8, 2-φ1.1, 8.9, 14, 3.3, 17, 30.5, 24.2, and 14.
- Mounting (Bottom views) showing the relay's footprint and mounting holes.
- Dimensions showing the overall size of the relay.
- Wiring diagram (Bottom views) showing three configurations labeled 1A, 1B, and 1C.

mm	inch
0.5	0.020
0.7	0.027
0.8	0.031
1.1	0.043
1.2	0.047
1.5	0.059
2.1	0.083
2.4	0.094
2.54	0.100
3.3	0.130
3.7	0.146
3.8	0.150
5.3	0.209
7.7	0.303
8.9	0.350
12.5	0.492
14	0.551
15.4	0.606
17	0.669
17.8	0.701
18.4	0.724
20	0.787
22.4	0.882
24.2	0.953
27.6	1.087
30.5	1.201
32.5	1.279

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

**Reference Data**

