



# NB90

32\*27.2\*20mm



## Product Features

- ◆ Contacts switching capability: 50A
- ◆ 4000VAC is available for dielectric strength between contact and coil
- ◆ Coil insulation grade Class F
- ◆ Contacts forms NO,NC&SPDT
- ◆ Dust-proof&Sealed type
- ◆ Complies with RoHS-Directive

## Contact Rating

|                         |                                                                                       |             |
|-------------------------|---------------------------------------------------------------------------------------|-------------|
| Contact Form            | 1A、 1C                                                                                |             |
| Contact Material        | AgCdO AgSnO <sub>2</sub>                                                              |             |
| Contact Load Capacity   | 1A                                                                                    | 1C          |
|                         | NO: 50A 277 VAC                                                                       | 50A 277 VAC |
|                         | TV-15                                                                                 | TV-15       |
|                         | NC:                                                                                   | 40A 277VAC  |
| Switching Power Max.    | 13850VA                                                                               |             |
| Switching Voltage Max.  | 277VAC                                                                                |             |
| Switching Current Max.  | 1A: 50A ; 1B: 40A ; 1C: NC:40A NO:50A                                                 |             |
| Contact Resistance Max. | 50mΩ (1A , 24VDC)                                                                     |             |
| Life expectancy         | Electrical NO:50A 1X10 <sup>4</sup> NO:40A 1X10 <sup>4</sup> NC:40A 1X10 <sup>4</sup> |             |
|                         | Mechanical 10 <sup>7</sup>                                                            |             |

Life test condition: normal temperature, pure resistant load, 1 S on, 9 S off.

**Coil Rating**

| 0.9W |              |      |                                           |                                              |                                              | 1.2W |              |      |                                           |                                              |                                              |
|------|--------------|------|-------------------------------------------|----------------------------------------------|----------------------------------------------|------|--------------|------|-------------------------------------------|----------------------------------------------|----------------------------------------------|
| No.  | Coil Voltage |      | Coil Resistance<br>$\Omega$<br>$\pm 10\%$ | Pick up (VDC)<br>Max. (75% of Rated Voltage) | Drop out (VDC)<br>Min.(10% of Rated Voltage) | No.  | Coil Voltage |      | Coil Resistance<br>$\Omega$<br>$\pm 10\%$ | Pick up (VDC)<br>Max. (75% of Rated Voltage) | Drop out (VDC)<br>Min.(10% of Rated Voltage) |
|      | Rated        | Max. |                                           |                                              |                                              |      | Rated        | Max. |                                           |                                              |                                              |
| 005  | 5            | 6.5  | 27.8                                      | 3.75                                         | 0.5                                          | 005  | 5            | 6.5  | 20.8                                      | 3.75                                         | 0.5                                          |
| 009  | 9            | 11.7 | 90                                        | 6.75                                         | 0.9                                          | 009  | 9            | 11.7 | 67.5                                      | 6.75                                         | 0.9                                          |
| 012  | 12           | 15.6 | 160                                       | 9.00                                         | 1.2                                          | 012  | 12           | 15.6 | 120                                       | 9.00                                         | 1.2                                          |
| 024  | 24           | 31.2 | 640                                       | 18.00                                        | 2.4                                          | 024  | 24           | 31.2 | 480                                       | 18.00                                        | 2.4                                          |
| 048  | 48           | 62.4 | 2560                                      | 36.00                                        | 4.8                                          | 048  | 48           | 62.4 | 1920                                      | 36                                           | 4.8                                          |

**Technical Rating**

|                       |                      |                                                                                                              |                     |
|-----------------------|----------------------|--------------------------------------------------------------------------------------------------------------|---------------------|
| Insulation Resistance |                      | Min.1000M $\Omega$ (500VDC)                                                                                  | IEC 60255-5         |
| Dielectric Strength   | Between Contacts     | 1500VAC                                                                                                      | IEC 60255-5         |
|                       | Between Coil&Contact | 2500VAC Min; (4000VAC Min without Pin #6,when required)                                                      | IEC 60255-5         |
| Operate Time          |                      | $\leq 15\text{ms}$                                                                                           |                     |
| Release Time          |                      | $\leq 10\text{ms}$                                                                                           |                     |
| Shock Resistance      |                      | Operation extremes 10G    Damage limits 100G                                                                 | IEC 68-2-27 test Ea |
| Vibration Resistance  |                      | 10Hz $\sim$ 55Hz double amplitude 1.5mm                                                                      | IEC 68-2-6 test Fc  |
| Ambient Temperature   |                      | - 40 $^{\circ}\text{C}$ $\sim$ 85 $^{\circ}\text{C}$ ; - 40 $^{\circ}\text{C}$ $\sim$ 105 $^{\circ}\text{C}$ |                     |
| Relative Humidity     |                      | 85% RH , 40 $^{\circ}\text{C}$                                                                               | IEC 68-2-3 test Ca  |
| Weight                |                      | Approx.26.0g                                                                                                 |                     |
| Package               |                      | Sealed;Dust-proof type                                                                                       |                     |

**Designation**
**NB90 - 12S - S - A W 4KV T-105°C X**
**1      2 3      4      5 6      7      8      9**

- 1、 **NB90**: Model No.(Max. contact load capacity 40A)
- 2、 **12**: Coil Rated Voltage:5V,6V,9V,12V,15V,18V,24V,48V,110V(DC)
- 3、 **S**: Package: S:Sealed D:Dust proof
- 4、 **S**: Contact Material: S:AgSnO<sub>2</sub>
- 5、 **A**: Contact Form: A:Normally Open B:Normally Close C:SPDT(NO&NC)
- 6、 **W**: white **None**: black
- 7、 **4KV**: Between contact and coil pressure-proof 4KV **None**: 2500V
- 8、 **T-105°C**: ambient temperature 105°C. **None**: normal temperature resistant
- 9、 **X**: Customer code

**Note:**(1) Applying under clean environment(excluding H<sub>2</sub>S、SO<sub>2</sub>、NO<sub>2</sub>、dust contaminants), dust-proof type is recommended;

Applying under polluted environment(containing H<sub>2</sub>S、SO<sub>2</sub>、NO<sub>2</sub>、dust contaminants), sealed type is recommended, and please confirm during practical applying;

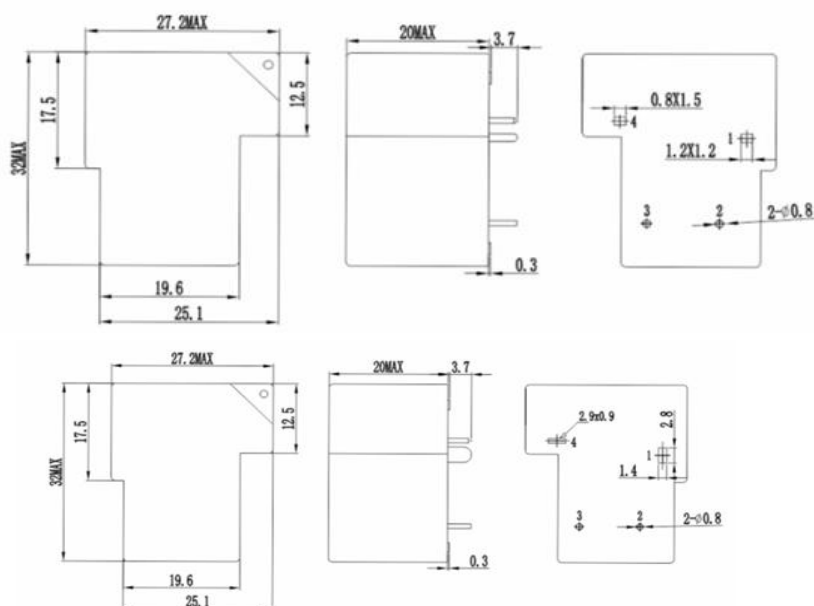
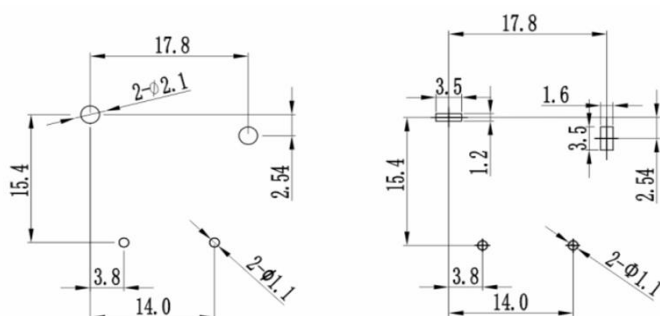
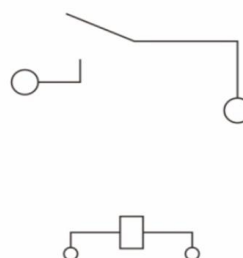
(2) When installed on PCB,and entire washing is needed,please notice us before order, so as to provide proper items;

(3) If dielectric strength between coil&contacts have to be over 2500VAC, please notice us before order, so as to provide proper items;

(4) Avoid applying under strong magnetic or shock extremes,or technical rating will change.

**Safety Certification**

|          |                  |                                                    |
|----------|------------------|----------------------------------------------------|
| Approval | TUV              | UL                                                 |
| Load     | 40A 240VAC 30VDC | NO:50A 277VAC TV-15<br>NC:40A 277VAC NO:2HP 240VAC |

**Dimensions**
**Outline Dimension**

**Bottom View Layout**

**Wiring Diagram**


Note (1) Tolerance is not marked on part of outline dimensions. Dimensions  $\leq 1\text{mm}$ , Tolerance  $\pm 0.2\text{mm}$ ;  
 Dimensions  $(1 \sim 5)\text{mm}$ , Tolerance  $\pm 0.3\text{mm}$ ; Dimensions  $> 5\text{mm}$ , Tolerance  $\pm 0.4\text{mm}$ ;  
 (2) Tolerance in bottom view layout is  $\pm 0.1\text{mm}$ .

**Engineering Data**
