



**Panasonic**  
ideas for life

High switching capacity  
1a/1c 30A power relays

**JT-N RELAYS**



PCB type



TMP type

RoHS compliant

## FEATURES

- High switching capacity — 30 A for 1 Form A
- 2 contact arrangements — 1 Form A or 1 Form C
- “TMP” types available
- UL, CSA recognized
- Class F type standard

## TYPICAL APPLICATIONS

- Air conditioner
- Heating & ventilation
- Home appliance

## ORDERING INFORMATION



Note: Certified by UL and CSA

## TYPES

### 1. 1 Form A Sealed type

| Nominal coil voltage | Part No.          |                    |
|----------------------|-------------------|--------------------|
|                      | PCB type          | TMP type           |
| 5V DC                | JTN1aS-PA-F-DC5V  | JTN1aS-TMP-F-DC5V  |
| 6V DC                | JTN1aS-PA-F-DC6V  | JTN1aS-TMP-F-DC6V  |
| 9V DC                | JTN1aS-PA-F-DC9V  | JTN1aS-TMP-F-DC9V  |
| 12V DC               | JTN1aS-PA-F-DC12V | JTN1aS-TMP-F-DC12V |
| 15V DC               | JTN1aS-PA-F-DC15V | JTN1aS-TMP-F-DC15V |
| 18V DC               | JTN1aS-PA-F-DC18V | JTN1aS-TMP-F-DC18V |
| 24V DC               | JTN1aS-PA-F-DC24V | JTN1aS-TMP-F-DC24V |

Standard packing: PCB type: Carton: 50 pcs.; Case: 500 pcs.  
TMP type: Carton: 50 pcs.; Case: 300 pcs.

2. 1 Form C Sealed type

| Nominal coil voltage | Part No.         |                   |
|----------------------|------------------|-------------------|
|                      | PCB type         | TMP type          |
| 5V DC                | JTN1S-PA-F-DC5V  | JTN1S-TMP-F-DC5V  |
| 6V DC                | JTN1S-PA-F-DC6V  | JTN1S-TMP-F-DC6V  |
| 9V DC                | JTN1S-PA-F-DC9V  | JTN1S-TMP-F-DC9V  |
| 12V DC               | JTN1S-PA-F-DC12V | JTN1S-TMP-F-DC12V |
| 15V DC               | JTN1S-PA-F-DC15V | JTN1S-TMP-F-DC15V |
| 18V DC               | JTN1S-PA-F-DC18V | JTN1S-TMP-F-DC18V |
| 24V DC               | JTN1S-PA-F-DC24V | JTN1S-TMP-F-DC24V |

Standard packing: PCB type: Carton: 50 pcs.; Case: 500 pcs.  
 TMP type: Carton: 50 pcs.; Case: 300 pcs.

RATING

1. Coil data

| Nominal coil voltage | Pick-up voltage (at 20°C 68°F)            | Drop-out voltage (at 20°C 68°F)           | Nominal operating current [±10%] (at 20°C 68°F) | Coil resistance [±10%] (at 20°C 68°F) | Nominal operating power | Max. applied voltage (at 20°C 68°F) |
|----------------------|---|---|---|---------------------------------------|-------------------------|-------------------------------------|
| 5V DC                | 75%V or less of nominal voltage (Initial) | 10%V or more of nominal voltage (Initial) | 161.3mA   | 31Ω                                   | 800mW                   | 6 V                                 |
| 6V DC                |   |   | 133.3mA   | 45Ω                                   |                         | 7.2V                                |
| 9V DC                |   |   | 89.1mA  | 101Ω                                  |                         | 10.8V                               |
| 12V DC               |   |   | 66.6mA  | 180Ω                                  |                         | 14.4 V                              |
| 15V DC               |   |   | 53.4mA  | 281Ω                                  |                         | 18 V                                |
| 18V DC               |   |   | 44.4mA  | 405Ω                                  |                         | 21.6V                               |
| 24V DC               |   |   | 33.3mA  | 720Ω                                  |                         | 28.8V                               |

2. Specifications

| Characteristics                                  | Item   | Specifications   |   |
|--|--|--|---|
| Contact  | Contact material   | AgSnO <sub>2</sub> type  |   |
|  | Arrangement  | 1 Form A / 1 Form C  |   |
|  | Contact resistance (Initial)                                   | Max. 50 mΩ (By voltage drop 6 V DC 1A)   |   |
| Rating   | Nominal switching capacity (resistive load)                    | 20A 277V AC / N.C.: 10A 277V AC, N.O.: 20A 277V AC   |   |
|  | Max. switching power (resistive load)                          | 8,310VA (30A 277V AC) / N.C.: 2,770VA, N.O.: 5,540VA   |   |
|  | Max. switching voltage   | 277V AC  |   |
|  | Max. switching current   | 30A / N.C.: 10A, N.O.: 20A   |   |
|  | Nominal operating power  | Approx. 800mW  |   |
|  | Min. switching capacity (reference value)*1                    | 100mA, 5V DC   |   |
| Electrical characteristics                       | Insulation resistance (Initial)                                | Min. 100MΩ (at 500V DC) Measurement at same location as "Breakdown voltage" section.   |   |
|  | Breakdown voltage (Initial)                                    | Between open contacts  | 1,200 Vrms for 1 min. (Detection current: 10 mA)                                      |
|  |  | Between contact and coil   | 2,500 Vrms for 1 min. (Detection current: 10 mA)                                      |
|  | Surge breakdown voltage*2 (Between contact and coil) (Initial) | —  |   |
|  | Operate time (at nominal voltage) (at 20°C 68°F)               | Max. 20 ms (excluding contact bounce time.)  |   |
| Release time (at nominal voltage) (at 20°C 68°F) | Max. 10 ms (excluding contact bounce time) (Without diode)     |  |   |
| Mechanical characteristics                       | Shock resistance   | Functional   | Min. 98 m/s <sup>2</sup> (Half-wave pulse of sine wave: 11 ms; detection time: 10μs.) |
|  |  | Destructive  | Min. 980 m/s <sup>2</sup> (Half-wave pulse of sine wave: 6 ms.)                       |
|  | Vibration resistance   | Functional   | 10 to 55 Hz at double amplitude of 1.5 mm (Detection time: 10μs.)                     |
|  |  | Destructive  | 10 to 55 Hz at double amplitude of 2 mm   |
| Expected life                                    | Mechanical   | Min. 1×10 <sup>7</sup>   |   |
|  | Electrical (at 20 times/min.)*3                                | Min. 1×10 <sup>5</sup> (20A 277V AC at resistive load) / N.O.: Min. 1×10 <sup>5</sup> (20A 277V AC at resistive load) / N.C.: Min. 1×10 <sup>5</sup> (10A 277V AC at resistive load) |   |
| Conditions                                       | Conditions for operation, transport and storage*4              | Ambient temperature: -55°C to +85°C -67°F to +185°F, Humidity: 5 to 85% R.H. (Not freezing and condensing at low temperature)  |   |
|  | Max. operating speed   | 20 times/min. (at nominal switching capacity)  |   |
| Unit weight                                      |  | PCB type: Approx. 25 g .88 oz<br>TMP type: Approx. 30 g 1.06 oz  |   |

\* Specifications will vary with foreign standards certification ratings.

Notes: \*1. This value can change due to the switching frequency, environmental conditions, and desired reliability level, therefore it is recommended to check this with the actual load.

\*2. Wave is standard shock voltage of ±1.2×50μs according to JEC-212-1981

\*3. In order to obtain the full rated life cycles, the relay should be properly vented by removing the vent nib. More detail, please look at caution for NOTES.

\*4. The upper limit of the ambient temperature is the maximum temperature that can satisfy the coil temperature rise value. Refer to Usage, transport and storage conditions in NOTES.

**REFERENCE DATA**

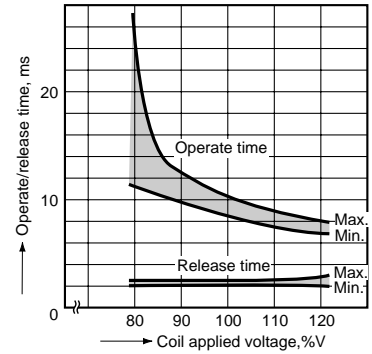
1. Change of rate of pick-up and drop-out voltage (at 20°C 68°F)  
 Sample: JTN1S-TMP-F-DC24V (6 pcs.)



2. Operate & release time (at 20°C 68°F)  
 Sample: JTN1S-TMP-F-DC24V (6 pcs.)



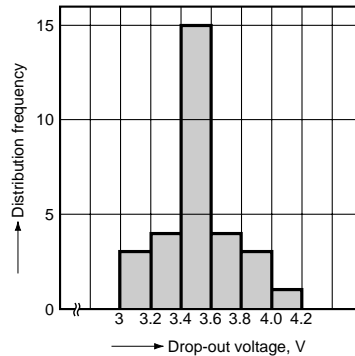
3. Operate & release time (at 20°C 68°F)  
 Sample: JTN1aS-PA-F-DC24V (6 pcs.)



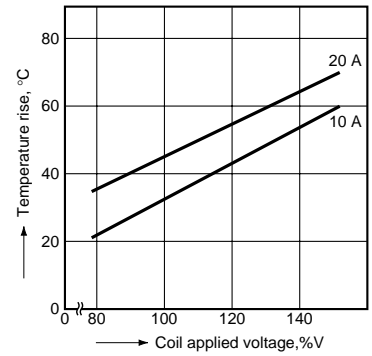
4. Distribution frequency of pick-up voltage (at 20°C 68°F)  
 Sample: JTN1S-TMP-F-DC12V (30 pcs.)



5. Distribution frequency of drop-out voltage (at 20°C 68°F)  
 Sample: JTN1S-TMP-F-DC12V (30 pcs.)

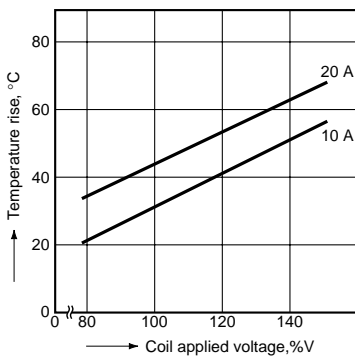


6.-(1) Coil temperature rise (TMP type)\*  
 Ambient temperature: 20°C 68°F  
 Sample: JTN1aS-TMP-F-DC12V (6 pcs.)

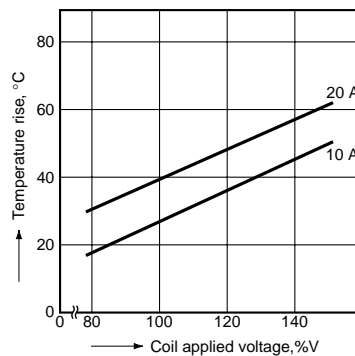


\* Coil temperature rise of sealed types are same as data of the dust cover type.

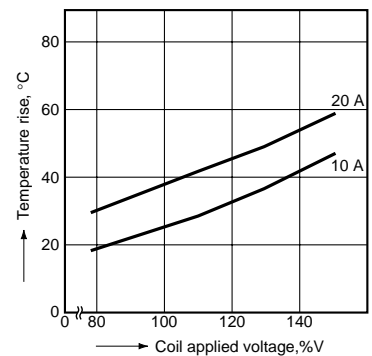
Ambient temperature: 55°C 131°F  
 Sample: JTN1aS-TMP-F-DC12V (6 pcs.)



Ambient temperature: 85°C 185°F  
 Sample: JTN1aS-TMP-F-DC12V (6 pcs.)



Ambient temperature: 105°C 221°F  
 Sample: JTN1aS-TMP-F-DC12V (6 pcs.)



# DIMENSIONS (mm inch)

The CAD data of the products with a **CAD Data** mark can be downloaded from: <http://industrial.panasonic.com/ac/e/>

## 1. PCB type

### CAD Data



### CAD Data



## 2. TMP type

### CAD Data



### CAD Data



## SAFETY STANDARDS

| Item     | UL/C-UL (Recognized) |                                      |
|----------|----------------------|--------------------------------------|
|          | File No.             | Contact rating                       |
| 1 Form A | E43028               | 30A 277V AC, 30A 28V DC, 2HP 250V AC |
| 1 Form C | N.O.                 | 20A 277V AC, 20A 28V DC, 2HP 250V AC |
|          | N.C.                 | 10A 277V AC, 10A 28V DC, ½HP 250V AC |

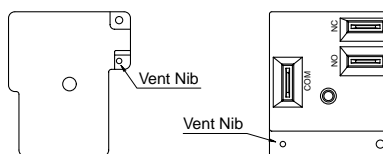
\* CSA standard: Certified by C-UL

## NOTES

### 1. Electrical life

In order to obtain the full rated life cycles, the relay should be properly vented by removing the vent nib after the soldering/washing process.

- PCB type
- TMP type



## For Cautions for Use.