



**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)* <sup>1</sup>	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* <sup>2</sup> (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.)* <sup>3</sup>	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* <sup>4</sup>	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 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.

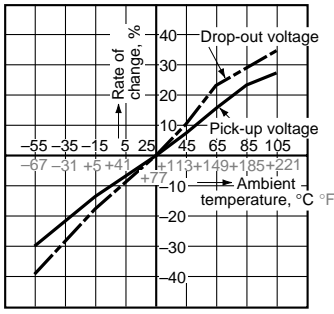
\*2. Wave is standard shock voltage of ±1.2×50μs according to JEC-212-1981

\*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.

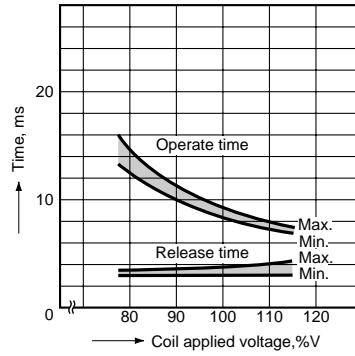
\*4. The upper limit of the ambient temperature is the maximum temperature that can satisfy the coil temperature rise value. Refer to Usage, transport and storage conditions in NOTES.

**REFERENCE DATA**

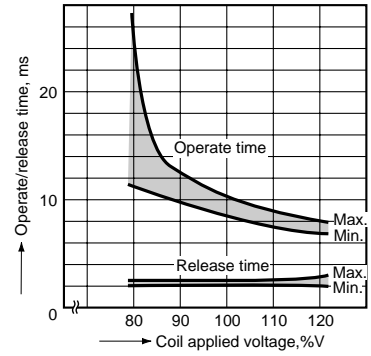
1. Change of rate of pick-up and drop-out voltage (at 20°C 68°F)  
 Sample: JTN1S-TMP-F-DC24V (6 pcs.)



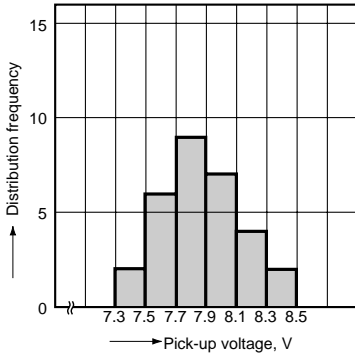
2. Operate & release time (at 20°C 68°F)  
 Sample: JTN1S-TMP-F-DC24V (6 pcs.)



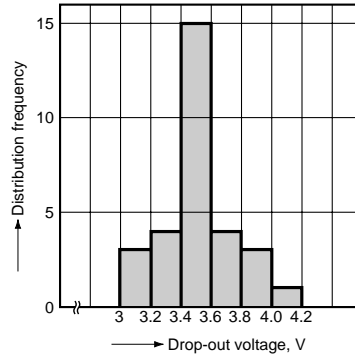
3. Operate & release time (at 20°C 68°F)  
 Sample: JTN1aS-PA-F-DC24V (6 pcs.)



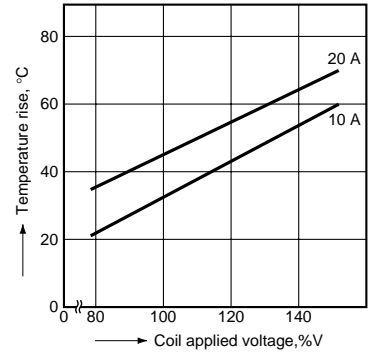
4. Distribution frequency of pick-up voltage (at 20°C 68°F)  
 Sample: JTN1S-TMP-F-DC12V (30 pcs.)



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

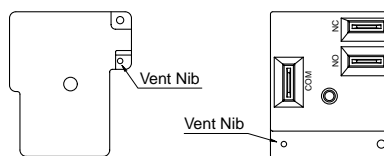
\* CSA standard: Certified by C-UL

**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.**