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## COMPACT POWER RELAYS







mm inch

## **FEATURES**

- High inrush current capability 1 Form A: 163 A inrush (TV-8) 2 Form A: 111 A inrush (TV-5)
- High dielectric withstanding for transient protection: JC can withstand 10,000 V surge in  $\mu$ s between coil and contact.
- Electrical life:

1 Form A:  $10^5$  ope. at 15 A 250 V AC resistive load 2 Form A:  $10^5$  ope.

at 10 A 250 V AC resistive load

• UL/CSA, VDE, TÜV, SEMKO also approved.

# **COMMENTS ABOUT Cd FREE**

We have introduced Cadmium free type products to reduce the material which is not good for our environment. (The suffix "F" should be added to the part number.) If you are still using Cadmium containing parts, which don't have "F" on the suffix of the part number, please use Cadmium free parts from now on. The life of the Cadmium free parts may be shorter than the Cadmium containing parts based on the load condition, so please evaluate the Cadmium free parts with your actual application before use.

RoHS Directive compatibility information http://www.nais-e.com/

# SPECIFICATIONS

### Contact

Arrangement			1 Form A	2 Form A
Initial contact resistance, max. (By voltage drop 6 V DC 1 A)		30 mΩ		
Contact material		AgSnO₂ type		
Contact for	ce, min.		30 g	
Rating (resistive	Maximum switching power		3,750 VA	2,500 VA
	Maximum switching voltage		250 V AC	250 V AC
	Max. switching current		15 A	10 A
louuj	Min. switch	ing capacity#1	100 mA	AC 250 V AC 10 A 0 mA, 5 V DC 5×106
Expected life (min. operation)	Mechanical		5×10 <sup>6</sup>	
	Electrical (resistive)	10 A 250 V AC	<b>10</b> ⁵	_
		5A 250 V AC		<b>10</b> ⁵

#### Coil

Nominal operating power 900 mW 1,000 mW

#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.

#### Remarks

- \* Specifications will vary with foreign standards certification ratings.
- \*1 Measurement of same location as "Initial breakdown voltage" section
- \*2 Detection current: 10mA
- \*3 Excluding contact bounce time
- \*4 Half-wave pulse of sine wave: 11ms; detection time: 10μs\*5 Half-wave pulse of sine wave: 6ms
- \*6 Detection time: 10µs
- \*7 Refer to 6. Conditions for operation, transport and storage mentioned in AMBIENT ENVIRONMENT

### Characteristics

Maximum operating speed			20 cpm.		
Initial insulation	on resistance*1		Min. 100 M $\Omega$ at 500 V DC		
Initial	Between open contacts		2,000 V rms for 1 min.		
	Between cont	acts sets	2,000 Vrms for 1 min.		
voltage*2	Between contacts and coil		4,000 Vrms for 1 min.		
Operate time (at nominal vo	*3 Ditage)		Max. 30 ms		
Release time (at nominal vo	(without diode) oltage)	*3	Max. 10 ms		
Temperature (at nominal vo	rise oltage)		Max. 55°C		
Shock	Functional*4		196 m/s² {20 G}		
resistance	Destructive*5		980 m/s² {100 G}		
Vibration	Functional*6		98 m/s <sup>2</sup> {10 G}, 10 to 55 Hz at double amplitude of 1.6 mm		
resistance	Destructive		117.6 m/s <sup>2</sup> {12 G}, 10 to 55 Hz at double amplitude of 2 mm		
Conditions for transport and	Conditions for operation, Ar transport and storage*7		<b>−50°C to +60°C</b> −58°F to +140°F		
(Not freezing and condens- ing at low temperature)		Humidity	5 to 85%R.H.		
Unit weight			Approx. 31 g 1.09 oz		

# JC **TYPICAL APPLICATIONS** Automatic garage door openers Microwave ovens

**ORDERING INFORMATION** 

Ex. JC 1a	F — <u></u>	DC12V —	F	
Contact arrangement	Mounting classification	Coil voltage	Contact material	
1a: 1 Form A 2a: 2 Form A	Nil: PC board terminal S: Plug-in terminal TM: Top mounting	DC 5, 6, 12, 24, 48 V	F: AgSnO₂ type	

(Notes) 1. TV rated types available 1 Form A: TV-8; 2 Form A: TV-5.

 Standard packing Carton: 50 pcs.; Case: 200 pcs.
UL/CSA, VDE, TUV, and SEMKO certified products can also be supported. Please consult us.

4. Please inquire about the previous products (Cadmium containing parts).

# COIL DATA (at 20°C 68°F)

Contact arrangement	Nominal voltage. V DC	Pick-up voltage. V DC (max.)	Drop-out voltage. V DC (min.)	Coil resistance, Ω(±10%)	Nominal operating current, mA	Nominal operating power, W	Maximum allowable voltage, V DC (at 60°C)
1 Form A	6	4.8	0.6	40	150	0.9	6.6
	12	9.6	1.2	160	75	0.9	13.2
	24	19.2	2.4	640	37.5	0.9	26.4
	48	38.4	4.8	2,560	18.8	0.9	52.8
2 Form A	6	4.8	0.6	36	166.6	1.0	6.6
	12	9.6	1.2	144	83.3	1.0	13.2
	24	19.2	2.4	576	41.6	1.0	26.4
	48	38.4	4.8	2,304	20.8	1.0	52.8

# DIMENSIONS

PC board type JC1a

Dryers

Copiers Air conditioners

TV sets

Vending machines

Stereo equipment







#### <sup>6</sup>لسباً Coil terminal Common terminal 5 夂 N.O. terminal 급 3

### PC board pattern (Bottom view)



ഞ്ച<sup>1</sup> Coil terminal Common terminal 5 🖵 چ<sup>2</sup> Ξ3 N.O. terminal 4

### PC board pattern (Bottom view)



Tolerance: ±0.1 ±.004

General tolerance: ±0.3 ±.012

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Schematic

mm inch

Schematic



PC board type

JC2a







### Top mount type





### Plug-in type







# **REFERENCE DATA**

### JC1a type

1. Maximum value for switching capacity







8.35

3.-(1) Coil temperature rise Point measured: Inside the coil Ambient temperature: 26°C 79°F



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JC

mm inch





# ACCESSORIES



#### (Note)

Outward dimensions and chassis cutout dimensions for JC1-SS and JC1-PS are same as those of JC2-SS and JC2-PS respectively. UL/CSA approved type is standard.

# For Cautions for Use, see Relay Technical Information