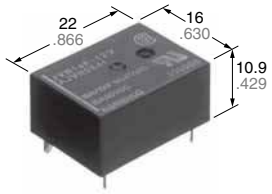
Panasonic
ideas for life

COMPACT FLAT POWER RELAY FOR HEATER LOADS

JV-N RELAYS



FEATURES

• High 16 A capacity
The contacts are high capacity 16A, 125 V AC.

• Compact, flat type with low 10.9 mm .429 inch height
Compact flat type with low surface area of 16 × 22 mm .630 × .866 inch and height of 10.9 mm .429 inch.

• High sensitivity at 200 mW
High sensitivity at 200 mW coil power consumption.

• Represses contact terminal heat
The contact terminals are larger and thicker compared to the existing JV relay. This limits the rise in temperature of the terminals when there is a large current flowing to approx. 28°C 62°F (normal current of 16 A).

• Conforms to the various safety standards
UL/CSA, TÜV approved.

About Cd-free contacts
We have introduced Cadmium free type products to reduce Environmental Hazardous Substances.
(The suffix "F" should be added to the part number)
Please replace parts containing Cadmium with Cadmium-free products and evaluate them with your actual application before use because the life of a relay depends on the contact material and load.

Compliance with RoHS Directive

SPECIFICATIONS

Contact

Arrangement			1 Form A
Initial contact resistance, max. (By voltage drop 6 V DC 1 A)			Max. 100 mΩ
Contact material			$AgSnO_2$ type
Rating (resistive load)	Nominal switching capacity		16 A 125 V AC, 10 A 277 V AC 10 A 30 V DC, 10 A 125 V AC
	Max. switching power		2,770 VA, 300 W
	Max. switching voltage		277 V AC, 30 V DC
	Max. switching current		16 A (AC 125 V), 10 A (DC)
	Min. switching capacity#1 (Reference value)		100 mA, 5 V DC
Expected life (min. ope.) Mechanical (at 180 cpm)			2×10^7
Electrical at resistive load (at 20 cpm)	Sealed type	16 A 125 V AC	3×10^4
		10 A 30 V DC	10^5
	Flux-resistant type 10 A 125 V AC		10^5

Coil

Nominal operating power	200 mW (DC 4.5 to 48 V) 600 mW (DC 100 V)

#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 Excluding contact bounce time
*2 Excluding contact bounce time, without diode
*3 By resistive method; nominal voltage applied to the coil; contact carrying current: 16A, at 70°C 158°F
*4 Nominal voltage applied to the coil, at 60°C 140°F
*5 Half-wave pulse of sine wave: 11 ms; detection time: 10 μs
*6 Half-wave pulse of sine wave: 6 ms
*7 Detection time: 10 μs
*8 Refer to 6. Conditions for operation, transport and storage mentioned in AMBIENT ENVIRONMENT.

Characteristics

Max. operating speed		20 cpm
Operate time*1 (at nominal voltage)		Max. 12 ms (DC 4.5 V to 48 V) Max. 8 ms (DC 100 V)
Release time*2 (at nominal voltage)		Max. 5 ms
Initial insulation resistance		Min. 1,000 MΩ (at 500 V DC)
Initial breakdown voltage (Detection current: 10 mA	Between open contacts	1,000 Vrms for 1 min.
	Between contacts and coil	2,500 Vrms for 1 min.
Surge voltage between contact and coil		4,500 V
Temperature rise		Max. 45°C (DC 4.5 V to 48 V) *3 Max. 55°C (DC 100 V)*4
Conditions in case of operation, transport and storage*8		Ambient temperature –40 to 70°C –40 to 158°F (DC 4.5 to 48 V) –40 to 60°C –40 to 140°F (DC 100V) Humidity: 5 to 85 % R.H. (Note freezing and condensing at low temperature) Air pressure: 86 to 106 kPa
Shock resistance	Functional	200 m/s²{20G}*5
	Destructive	1,000 m/s²{100G}*6
Vibration resistance	Functional	10 to 55 Hz *7 at double amplitude of 1.6 mm
	Destructive	10 to 55 Hz at double amplitude of 2 mm
Unit weight		Approx. 8g .28 oz

TYPICAL APPLICATIONS

- AV equipment: TV's, VTR's, etc.
- OA equipment
- HA equipment

ORDERING INFORMATIONS

Ex. JVN [1a] [F] – [4.5 V] – [F]

Contact arrangement	Protective construction	Coil voltage (DC)	Contact material
1a: 1 Form A	Nil: Sealed type F: Flux-resistant type	4.5, 6, 9, 12,18, 24, 48, 100 V	F: $AgSnO_2$ type

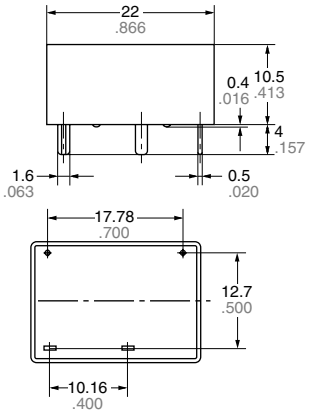
UL/CSA, TÜV approved type is standard.
Please inquire about the previous products (Cadmium containing parts).

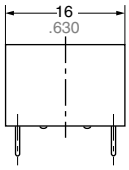
TYPES AND COIL DATA (at 20°C 68°F)

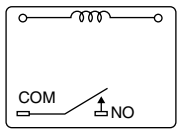
Part No.		Nominal voltage, V DC	Pick-up voltage V DC (max.)	Drop-out voltage V DC (min.)	Coil resistance, W (±10%)	Nominal operating current, mA (±10%)	Nominal operating power, mW	Max. allowable voltage, V DC
Sealed type	Flux-resistant type							
JVN1a-4.5V-F	JVN1aF-4.5V-F	4.5	3.375	0.23	101	44.4	200	6.75
JVN1a-6V-F	JVN1aF-6V-F	6	4.5	0.3	180	33.3	200	9
JVN1a-9V-F	JVN1aF-9V-F	9	6.75	0.45	405	22.2	200	13.5
JVN1a-12V-F	JVN1aF-12V-F	12	9	0.6	720	16.7	200	18
JVN1a-18V-F	JVN1aF-18V-F	18	13.5	0.9	1,620	11.1	200	27
JVN1a-24V-F	JVN1aF-24V-F	24	18	1.2	2,880	8.3	200	36
JVN1a-48V-F	JVN1aF-48V-F	48	36	2.4	11,520	4.2	200	72
JVN1a-100V-F	JVN1aF-100V-F	100	60	4	16,600	6	600	110

DIMENSIONS

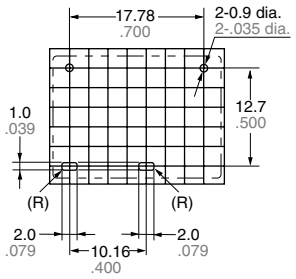
mm inch







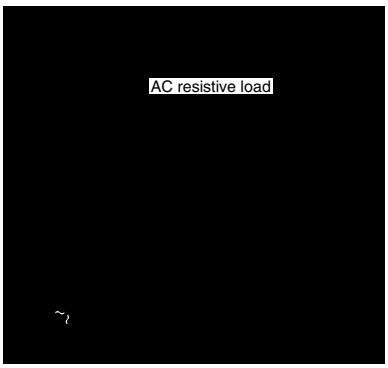
PC board pattern



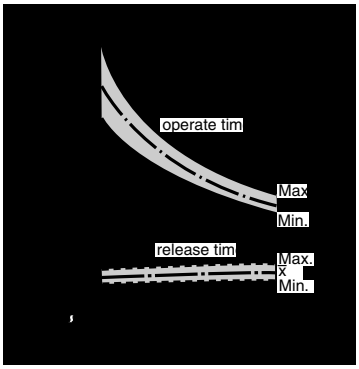
Dimension:	General tolerance
Max. 1mm .039 inch:	±0.2 ±.008
1 to 5mm .039 to .197 inch:	±0.3 ±.012
Min. 5mm .197 inch:	±0.4 ±.016

REFERENCE DATA

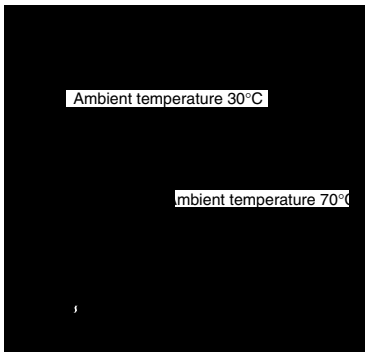
1. Max. switching power



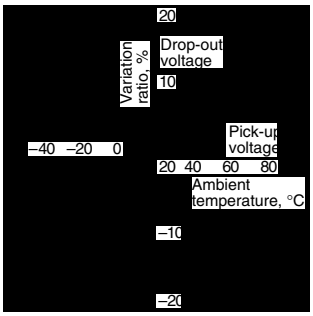
2. Operate/release time
Sample: JVN1aF-12 V-F, 6 pcs.



3. Coil temperature rise
Sample: JVN1aF-12 V-F, 6 pcs.
point measured: coil inside
Contact current: 16 A



4. Ambient temperature characteristics
Sample: JVN1aF-12 V-F, 6 pcs.



For Cautions for Use, see Relay Technical Information.