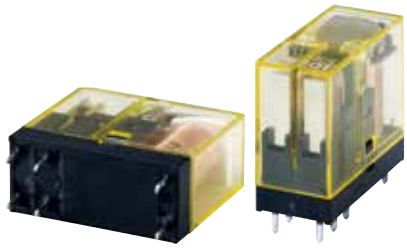
RJ Series Slim Power Relays PC Board Terminal (bifurcated contacts)

High contact reliability with bifurcated contacts (minimum applicable load: 1V DC, 100 µA)

- DPDT, DPST-NO contacts are available.
- IDEC's unique spring return mechanism ensures long life.
- Flux-tight structure



DPST-NO contact (bifurcated)

DPDT contact (bifurcated)

Applicable Standards

Applicable Standards	Mark	File No. or Organization
UL508		UL Recognized File No. E55996
CSA C22.2 No.14		CSA File No. LR35144
EN61810-1	VDE REG.-Nr. B312	VDE No. 40015055
	CE	EU Low Voltage Directive

Relays

Bifurcated Contacts

Style	Contact	2-pole (bifurcated contacts DPDT)	
		Part No.	Coil Voltage Code
Plain	DPDT	**RJ22V-C-***	A12, A24, A110, A115, A120, A220, A230, A240, D5, D6, D12, D24, D48, D100
	DPST-NO	**RJ22V-A-***	

Coil Voltage Code

Code	Voltage
A12	12V AC
A24	24V AC
A110	110V AC
A115	115VAC
A120	120V AC
A220	220V AC
A230	230V AC
A240	240V AC
D5	5V DC
D6	6V DC
D12	12V DC
D24	24V DC
D48	48V DC
D100	100-110V DC

Contact Ratings

Allowable Contact Power		Rated Load			Allowable Switching Current	Allowable Switching Voltage	Minimum Applicable Load (Note)
Resistive Load	Inductive Load	Voltage	Resistive Load	Inductive Load cosø=0.4 L/R=7ms			
250VA AC 30W DC	100VA AC 15W DC	250V AC	1A	0.4A	1A	250V AC 125V DC	1V DC 100µA (reference value)
		30V DC	1A	0.5A			

Note: Measured at operating frequency of 120 operations per minute (failure rate level P, reference value)

Ratings

Voltage	UL ratings				CSA Ratings						VDE Ratings	
	Resistive		General Use		Resistive		Inductive		General Use		Resistive	
	NO	NC	NO	NC	NO	NC	NO	NC	NO	NC	NO	NC
250V AC	—	—	1A	1A	—	—	—	—	1A	1A	1A	1A
30V DC	1A	1A	—	—	1A	1A	1A	1A	—	—	1A	1A

RJ Series Slim Power Relays PC Board Terminal (bifurcated contacts)

Coil Ratings

Rated Voltage (V)		Coil Voltage Code	Rated Current (mA) ±15% (at 20°C)		Coil Resistance (Ω) ±10% (at 20°C)	Operating Characteristics (against rated values at 20°C)			Power Consumption
			50Hz	60Hz		Pickup Voltage (initial value)	Dropout Voltage (initial value)	Maximum Continuous Applied Voltage (Note)	
AC 50/60 Hz	12V	A12	87.3	75.0	62.5	80% maximum	30% minimum	140%	Approx. 1.1VA (50Hz) 0.9 to 1.2VA (60Hz)
	24V	A24	43.9	37.5	243				
	110V	A110	9.6	8.2	5,270				
	115V	A115	9.1	7.8	6,030				
	120V	A120	8.8	7.5	6,400				
	220V	A220	4.8	4.1	21,530				
	230V	A230	4.6	3.9	24,100				
	240V	A240	4.3	3.7	25,570				
DC	5V	D5	106		47.2	70% maximum	10% minimum	170%	Approx. 0.53 to 0.64W
	6V	D6	88.3		67.9				
	12V	D12	44.2		271				
	24V	D24	22.1		1,080				
	48V	D48	11.0		4,340				
	100-110V	D100	5.3-5.8		18,870			160%	

Note: Maximum continuous applied voltage is the maximum voltage that can be applied to relay coils.

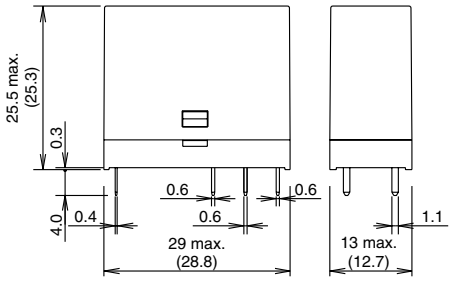
Specifications

Model		RJ22V
Number of Poles		2-pole
Contact Configuration		DPDT (bifurcated), DPST-NO (bifurcated)
Contact Material		AgNi (gold clad)
Degree of Protection		Flux-tight structure
Contact Resistance (initial value)		50 mΩ maximum (measured using 5V DC, 1A voltage drop method)
Operating Time (at 20°C)		15 ms maximum (at the rated coil voltage, excluding contact bounce time)
Release Time (at 20°C)		10 ms maximum (at the rated coil voltage, excluding contact bounce time)
Insulation Resistance		100 MΩ minimum (500V DC megger)
Impulse Withstand Voltage		10,000V AC (between contact and coil)
Dielectric Strength	Between contact and coil	5,000V AC, 1 minute
	Between contacts of the same pole	1,000V AC, 1 minute
	Between contacts of the different poles	3,000V AC, 1 minute
Vibration Resistance	Operating Extremes	10 to 55 Hz, amplitude 0.75 mm
	Damage Limits	10 to 55 Hz, amplitude 0.75 mm
Shock Resistance	Operating Extremes	NO contact: 200 m/s^2, NC contact: 100 m/s^2
	Damage Limits	1,000 m/s^2
Electrical Life		AC load: 100,000 operations minimum (operating frequency 1,800 per hour) DC load: 200,000 operations minimum (operating frequency 1,800 per hour)
Mechanical Life		AC load: 10 million operations minimum (operating frequency 18,000 operations per hour) DC load: 20 million operations minimum (operating frequency 18,000 operations per hour)
Operating Temperature (100% rated voltage)		–40 to +70°C (no freezing)
Operating Humidity		5 to 85% RH (no condensation)
Storage Temperature		–40 to +85°C (no freezing)
Storage Humidity		5 to 85% RH (no condensation)
Weight (approx.)		DPDT: 17g, DPST-NO: 16g

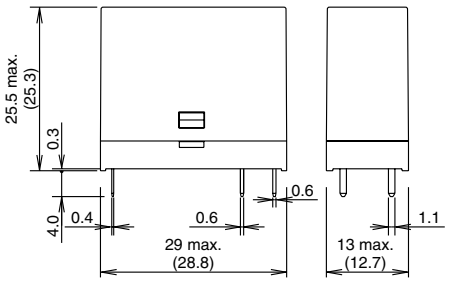
RJ Series Slim Power Relays PC Board Terminal (bifurcated contacts)

Dimensions

RJ22V-C-∗

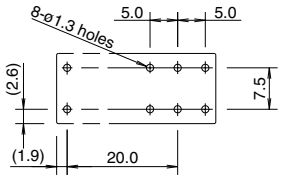


RJ22V-A-∗

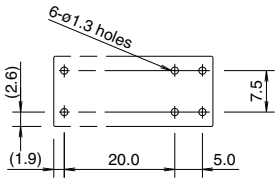


Mounting Hole Layout

RJ22V-C-∗



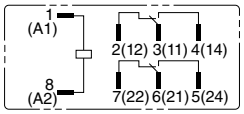
RJ22V-A-∗



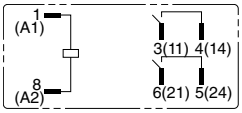
All dimensions in mm.

Internal Circuit Diagram (Bottom View)

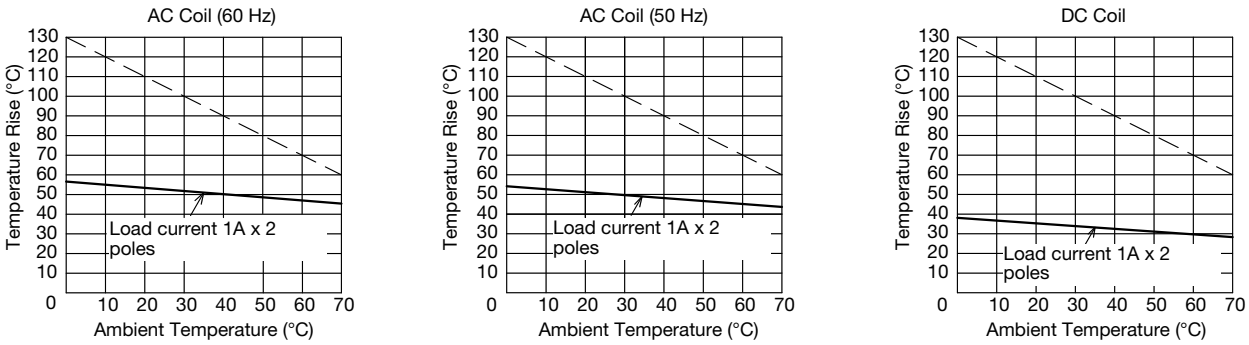
RJ22V-C-∗



RJ22V-A-∗



Operating Temperature and Coil Temperature Rise



- The slanted dashed line indicates the allowable temperature rise for the coil at different ambient temperatures.
- The above temperature rise curves show the characteristics when 100% of the rated coil voltage is applied.

⚠ Safety Precautions

- Turn off the power to the RJ relay before starting installation, removal, wiring, maintenance, and inspection. Failure to turn power off may cause electrical shock or fire hazard.
- Observe the specifications and rated values, otherwise electrical shock or fire hazard may be caused.
- Use wires of the proper size to meet the voltage and current requirements.
- Tighten terminal screws to a proper tightening torque.