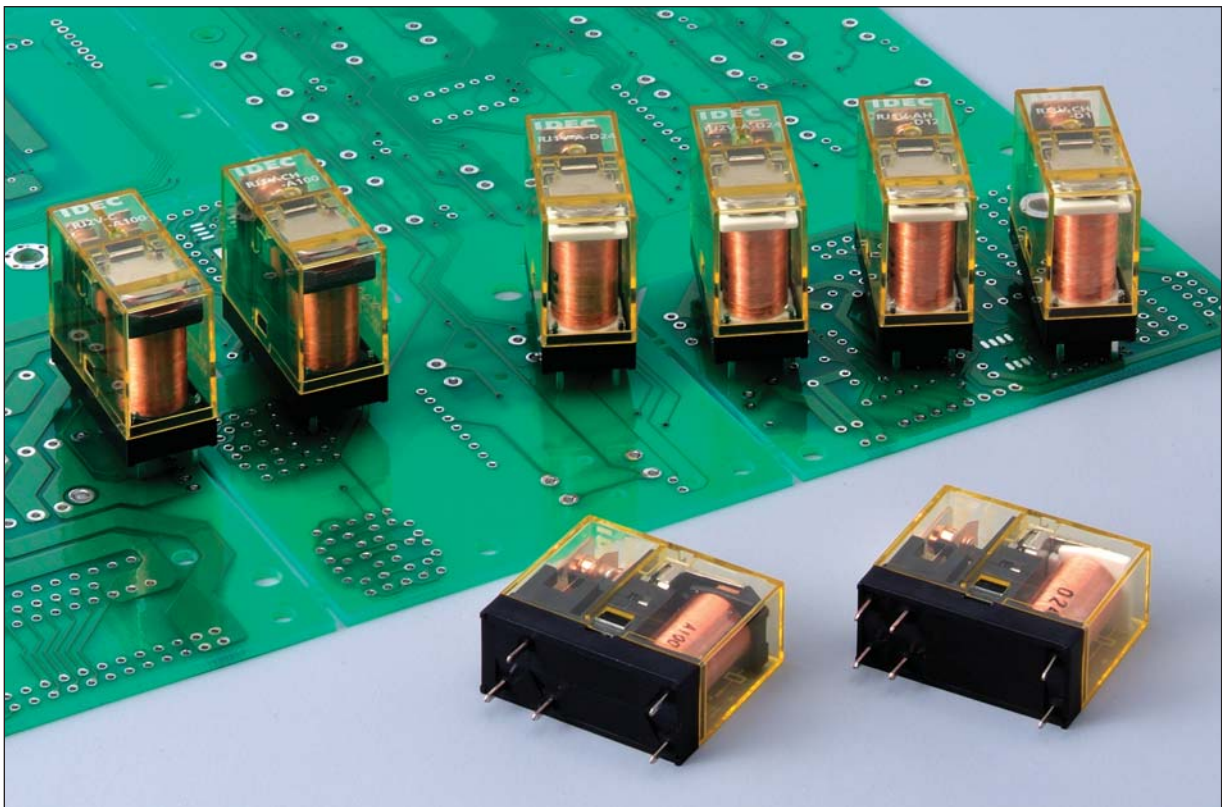
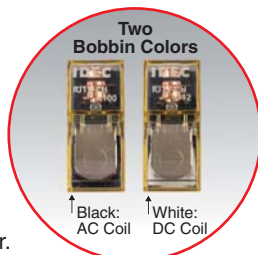


# RJ Series Slim Power Relays PC Board Terminal Type



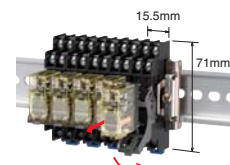
## Features

- Compact power relays with a large switching capacity
- IDEC's unique return spring structure provides for extended life.
- Contact configurations: SPDT, SPST-NO, DPDT, DPST-NO
- SPDT and SPST-NO are available with 16A rated contacts.
- Flux-tight structure
- Available with AC or DC coil voltages
- AC or DC control power can be distinguished by the bobbin color.



## Plug-in Type

- High-visibility coil status with LED indicator. IDEC's unique light guide structure IEC-compliant green indication
- RC circuit and diode available. The industry's first RC circuit in slim power relays.
- Proprietary SJ sockets with release levers save space. DIN rail and panel mounting

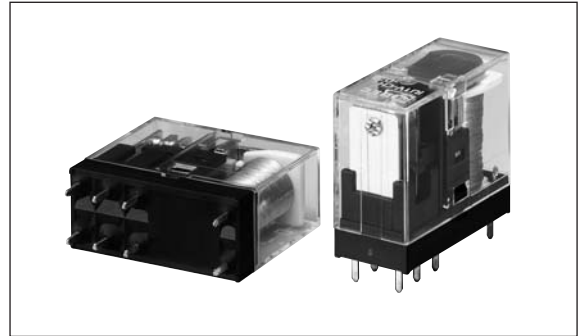


IDEC CORPORATION

# RJ Series Slim Power Relays PC Board Terminal Type

## Compact power relays. High switching capacity up to 16A.

- Contact configurations:  
SPDT, SPST-NO, DPDT, DPST-NO.  
SPDT, SPST-NO are available in high capacity type.
- Compact housing—only 12.7-mm wide.
- High contact rating  
RJ1V (1-pole): 12A, 16A  
RJ2V (2-pole): 8A
- IDEC's unique spring return mechanism ensures long electrical and mechanical life.  
Electrical life: 200,000 operations (AC load)  
Mechanical life: 30 million operations (AC coil, SPDT, DPDT)
- Flux-tight structure
- Environmentally friendly, RoHS directive compliant (EU directive 2002/95/EC). Contains no lead, cadmium, mercury, hexavalent chromium, PBB, or PBDE).



Standard	Mark	Certification Organization / File No.
UL508		UL File No. E55996
CSA C22.2 No. 14		CSA1608322 (LR35144)
EN61810-1		VDE (REG.-Nr.B312)
		EC Low Voltage Directive

### Types

#### • PC Board Terminal Type

No. of Poles	Type	Contact	Type No.	Coil Voltage Code	Package Quantity
1	Plain Type	SPDT	RJ1V-C-*	Specify a coil voltage code in place of * in the Type No. A12 D5 A24 D6 A110 D12 A115 D24 A120 D48 A220 D100 A230 A240	1
		SPST-NO	RJ1V-A-*		
	High Capacity Type	SPDT	RJ1V-CH-*		
		SPST-NO	RJ1V-AH-*		
2	Plain Type	DPDT	RJ2V-C-*		
		DPST-NO	RJ2V-A-*		

#### • Coil Voltage Code \*

Code	Rated Coil Voltage
A12	12V AC
A24	24V AC
A110	110V AC
A115	115V AC
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

No. of Poles	Type	Contact	Allowable Contact Power		Rated Load			Allowable Switching Current	Allowable Switching Voltage	Minimum Applicable Load (reference value)
			Resistive Load	Inductive Load	Voltage	Resistive Load	Inductive Load cos $\phi$ = 0.3 L/R = 7 ms			
1	Plain Type	NO	3000VA AC 360W DC	1875VA AC 180W DC	250V AC 30V DC	12A 12A	7.5A 6A	12A	250V AC 125V DC	5V DC, 100 mA
		NC	3000VA AC 180W DC	1875VA AC 90W DC	250V AC 30V DC	12A 6A	7.5A 3A			
	High Capacity Type	NO	4000VA AC 480W DC	2000VA AC 240W DC	250V AC 30V DC	16A 16A	8A 8A	16A	250V AC 125V DC	5V DC, 100 mA
		NC	4000VA AC 240W DC	2000VA AC 120W DC	250V AC 30V DC	16A 8A	8A 4A			
2	Plain Type	NO	2000VA AC 240W DC	1000VA AC 120W DC	250V AC 30V DC	8A 8A	4A 4A	8A	250V AC 125V DC	5V DC, 10 mA
		NC	2000VA AC 120W DC	1000VA AC 60W DC	250V AC	8A	4A			
			2000VA AC 120W DC	1000VA AC 60W DC	30V DC	4A	2A			

# RJ Series Slim Power Relays PC Board Terminal Type

## Coil Ratings

Rated Voltage	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		
		50 Hz	60 Hz		Minimum 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. 1.1 VA (50Hz)  Approx. 0.9 to 1.2VA (60Hz)	
	24V	A24	43.9	37.5						243
	110V	A110	9.6	8.2						5270
	115V	A115	9.1	7.8						6030
	120V	A120	8.8	7.5						6400
	220V	A220	4.8	4.1						21530
	230V	A230	4.6	3.9						24100
240V	A240	4.3	3.7	25570						
DC	5V	D5	106		47.2	70% maximum	10% minimum	170%	Approx. 0.53W to 0.64W	
	6V	D6	88.3		67.9					
	12V	D12	44.2		271					
	24V	D24	22.1		1080					
	48V	D48	11.0		4340					
	100-110V	D100	5.3-5.8		18870					

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

## Specifications

Type	RJ1V Plain Type	RJ1V High Capacity Type	RJ2V Plain Type
Number of Poles	1-pole	1-pole	2-pole
Contact Configuration	SPDT, SPST-NO	SPDT, SPST-NO	DPDT, DPST-NO
Contact Material	Ag-Ni	Ag-Sn-In	Ag-Ni
Enclosure Ratings	Flux-tight		
Contact Resistance (initial value) (*1)	50 mΩ maximum		
Operate Time (*2)	15 ms maximum		
Release Time (*2)	10 ms maximum		
Impulse Withstand Voltage	10,000V (between contact and coil)		
Dielectric Strength	Between contact and coil	5000V AC, 1 minute	5000V AC, 1 minute
	Between contacts of the same pole	1000V AC, 1 minute	1000V AC, 1 minute
	Between contacts of different poles	—	3000V 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 <sup>2</sup> (20G), NC contact: 100 m/s <sup>2</sup> (10G)	
	Damage limits	1000 m/s <sup>2</sup> (100G)	
Mechanical Life (no load)	AC coil: 30 million operations minimum (SPDT/DPDT, operation frequency 18,000 operations per hour) 10 million operations minimum (SPST-NO/DPST-NO, operation frequency 18,000 operations/h) DC coil: 50 million operations minimum (SPDT/DPDT, operation frequency 18,000 operations per hour) 20 million operations minimum (SPST-NO/DPST-NO, operation frequency 18,000 operations/h)		
Electrical Life (rated load)	AC load: 200,000 operations minimum (operation frequency 1,800 operations per hour) DC load: 100,000 operations minimum (operation frequency 1,800 operations per hour)		
Operating Temperature (*3)	-40 to +70°C (no freezing)		
Operating Humidity	5 to 85% RH (no condensation)		
Weight (approx.)	SPDT: 17g SPST-NO: 16g	SPDT: 17g SPST-NO: 16g	DPDT: 17g DPST-NO: 16g

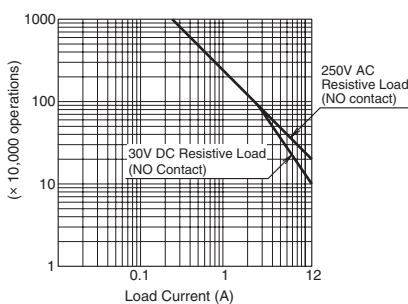
\*1: Measured using 5V DC, 1A voltage drop method.

\*2: Measured at the rated voltage (at 20°C), excluding contact bounce time.

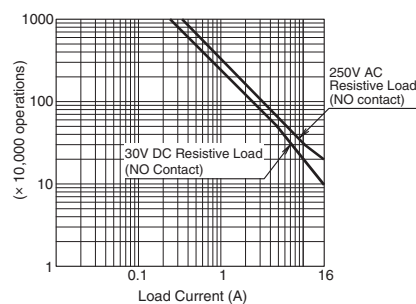
\*3: 100% rated voltage.

## Electrical Life Curve (resistive load)

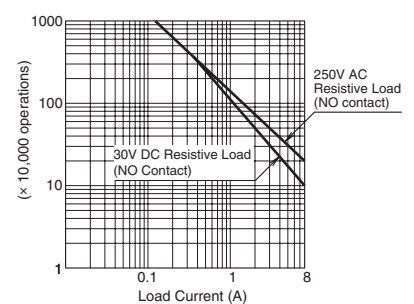
### • RJ1V Plain Type



### • RJ1V High Capacity Type



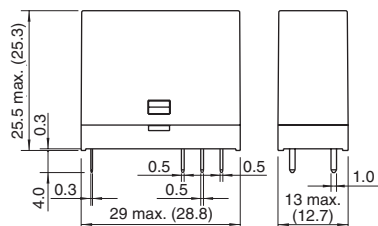
### • RJ2V Plain Type



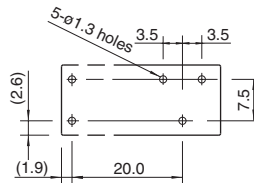
# RJ Series Slim Power Relays PC Board Terminal Type

## Dimensions

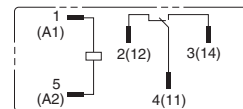
• RJ1V-C-\*  
Plain Type  
SPDT



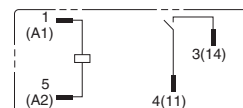
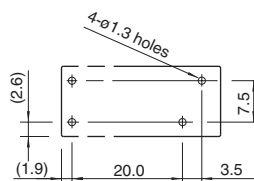
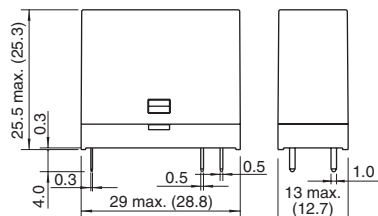
## Mounting Hole Layout (Bottom View)



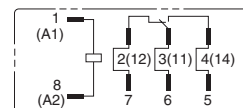
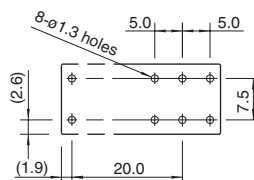
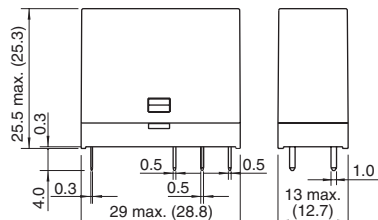
## Internal Circuit Diagram (Bottom View)



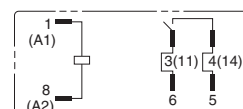
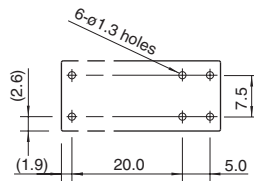
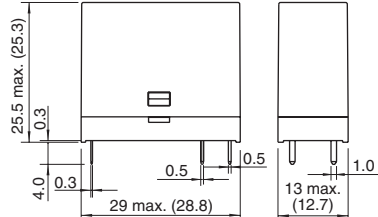
• RJ1V-A-\*  
Plain Type  
SPST-NO



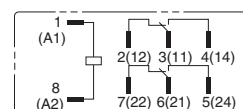
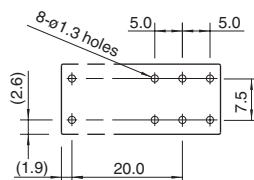
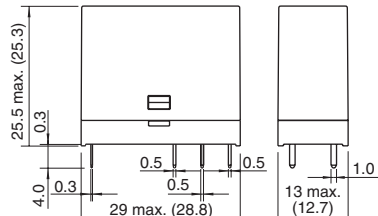
• RJ1V-CH-\*  
High Capacity Type  
SPDT



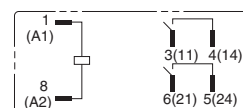
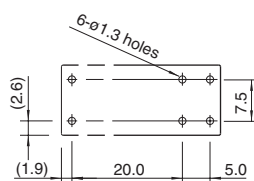
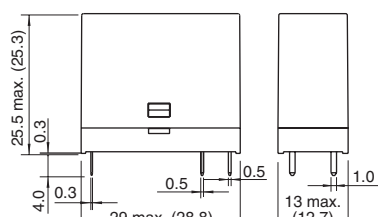
• RJ1V-AH-\*  
High Capacity Type  
SPST-NO



• RJ2V-C-\*  
Plain Type  
DPDT



• RJ2V-A-\*  
Plain Type  
DPST-NO



All dimensions in mm.

Specifications and other descriptions in this catalog are subject to change without notice.



## IDEC CORPORATION

IDEC CORPORATION (USA)  
1175 Elko Drive, Sunnyvale, CA 94089-2209, USA  
Tel: +1-408-747-0550 / (800) 262-IDEC (4332)  
Fax: +1-408-744-9055 / (800) 635-6246  
E-mail: opencontact@iddec.com

IDEC CANADA LIMITED  
Unit 22-151, Brunel Road, Mississauga, Ontario,  
L4Z 1X3, Canada  
Tel: +1-905-890-8561, Toll Free: (888) 317-4332  
Fax: +1-905-890-8562  
E-mail: sales@ca.iddec.com

IDEC AUSTRALIA PTY. LTD.  
2/3 Macro Court, Rowville, Victoria 3178, Australia  
Tel: +61-3-9763-3244, Toll Free: 1800-68-4332  
Fax: +61-3-9763-3255  
E-mail: sales@au.iddec.com

IDEC ELECTRONICS LIMITED  
Unit 2, Beechwood, Chineham Business Park,  
Basingstoke, Hampshire RG24 8WA, UK  
Tel: +44-1256-321000, Fax: +44-1256-327755  
E-mail: sales@uk.iddec.com

IDEC ELEKTROTECHNIK GmbH  
Wendenstrasse 331, 20537 Hamburg, Germany  
Tel: +49-40-25 30 54 - 0, Fax: +49-40-25 30 54 - 24  
E-mail: service@iddec.de

IDEC (SHANGHAI) CORPORATION  
Room 608-609, 6F, Gangtai Plaza, No. 700,  
Yan'an East Road, Shanghai 200001, PRC  
Tel: +86-21-5353-1000, Fax: +86-21-5353-1263  
E-mail: idec@cn.iddec.com

IDEC (BEIJING) CORPORATION  
Room 211B, Tower B, The Grand Pacific Building,  
8A Guanghua Road, Chaoyang District,  
Beijing 100026, PRC  
Tel: +86-10-6581-6131, Fax: +86-10-6581-5119

IDEC (SHENZHEN) CORPORATION  
Unit AB-3B2, Tian Xiang Building, Tian'an Cyber Park,  
Fu Tian District, Shenzhen, Guang Dong 518040, PRC  
Tel: +86-755-8356-2977, Fax: +86-755-8356-2944

7-31, Nishi-Miyahara 1-Chome, Yodogawa-ku, Osaka 532-8550, Japan  
Tel: +81-6-6398-2571, Fax: +81-6-6392-9731  
E-mail: products@iddec.co.jp

IDEC IZUMI (H.K.) CO., LTD.  
Unit 1505-07, DCH Commercial Centre No. 25,  
Westlands Road, Quarry Bay, Hong Kong  
Tel: +852-2803-8989, Fax: +852-2565-0171  
E-mail: info@hk.iddec.com

IDEC TAIWAN CORPORATION  
8F-1, No. 79, Hsin Tai Wu Road, Sec. 1,  
Hsi-Chih, Taipei County, Taiwan  
Tel: +886-2-2698-3929, Fax: +886-2-2698-3931  
E-mail: service@tw.iddec.com

IDEC IZUMI ASIA PTE. LTD.  
No. 31, Tannery Lane #05-01, Dragon Land  
Building, Singapore 347788  
Tel: +65-6746-1155, Fax: +65-6844-5995  
E-mail: info@sg.iddec.com