

RJ Series Relays

Features

- Compact size:
Blade: 12.7 x 27 x 28.8 mm
PCB: 12.7 x 25.5 x 28.8 mm
- Contact rating:
Blade: 8A (DPDT), 12A (SPDT)
PCB: 8A (DPDT & DPST-NO), 12A (SPDT & SPST-NO),
16A (SPDT & SPST-NO)
- Operational life:
200K cycles at full resistive AC load;
50 million cycles, no load
- Blade model has optional green, non-polarized LED
- RoHS compliant



Specifications

			Blade Models		PCB Models		
			RJ1S	RJ2S	RJ1V	RJ1V (High Capac- ity)	RJ2V
General Information	No. of poles		1	2	1	1	2
	Contact Configuration		SPDT	DPDT	SPDT, SPST-NO		DPDT, DPST-NO
	Contact Rating		12A	8A	12A	16A	8A
	Contact Material		AgNi		AgNi	AgSnIn	AgNi
	Enclosure Ratings		—		Flux protection		
	Contact Resistance		50 milliohms max		50 milliohms max ^{Note 1}		
	Operating Time		15ms max		15ms max ^{Note 2}		
	Release Time		10ms max		10ms max ^{Note 2}		
	Dielectric Strength	Between contact & coil	5,000V AC, 1 minute		5,000V AC, 1 minute		
		Between contacts of same poles	1,000V AC, 1 minute		1,000V AC, 1 minute		
		Between contacts of different poles	—	3,000V AC, 1 min.	—	3,000V AC, 1 min.	
	Vibration Resistance	Damage limits	10-55Hz, amplitude 0.75mm		10-55Hz, amplitude 0.75mm		
		Operating extremes	10-55Hz, amplitude 0.75mm		10-55Hz, amplitude 0.75mm		
	Shock Resistance	Damage limits	100m/s ² min (10G)		NO contact: 200m/s ² (20G) NC contact: 100m/s ² (10G)		
		Operating extremes	1,000m/s ² min (100G)		1,000m/s ² min (100G)		
	Mechanical Life	AC	30,000,000 operations		30,000,000 operations		
		DC	50,000,000 operations		50,000,000 operations		
	Electrical Life @ Full Rated Load	AC	200,000 operations		200,000 operations		
		DC	100,000 operations		100,000 operations		
	Operating Temperature		-40 to 70° C		-40 to 70° C ^{Note 3}		
	Operating Humidity		5 to 85% RH		5 to 85% RH		
	Dimensions (H x W x D mm)		12.7 x 27 x 28.8		12.7 x 25.5 x 28.8		
	Weight (Approx.)		19g		SPDT: 17g, SPST-NO: 16g		DPDT: 17g, DPST-NO: 16g

Notes:

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.



Ordering Information

Blade Models

Contact Configuration	Options	Coil Voltage
1 - SPDT 2 - DPDT	Blank - Standard L - LED	D12 - 12V DC D24 - 24V DC D48 - 48V DC D100 - 100-110V DC A24 - 24V AC A120 - 120V AC A240 - 240V AC

PCB Models

Number of Poles	Contact Configuration	Contact Configuration	Coil Voltage
1 - SP (Single Pole) 2 - DP (Double Pole)	C - FORM C (DT Double Throw) A - FORM A (ST Single Throw)	Blank - Standard H - High Capacity Type (RJ1 only)	D5 - 5V DC D6 - 6V DC D12 - 12V DC D24 - 24V DC D48 - 48V DC D100 - 100-110V DC A24 - 24V AC A120 - 120V AC A240 - 240V AC

Contact Ratings

Contact Ratings	Type		Contact	Allowable Contact Power		Rated Load			Allowable Switching Current	Allowable Switching Voltage	Minimum Applicable Load	
				Resistive Load	Inductive Load	Voltage	Resistive Load	Inductive Load cos _{=0.3} L/R=7ms				
	Blade Models	1 pole	NO	AC3000V	AC1875VA	250V AC	12A	7.5A	6A	AC250V DC30V	DC5V 100mA	
			NC	AC3000V	AC1875VA	250V AC	12A	7.5A	6A/3A			
		2 poles	NO	AC2000V	AC1000VA	250V AC	8A	4A	4A	AC250V DC30V	DC5V 100mA	
			NC	AC2000V	AC1000VA	250V AC	8A	4A	4A/2A			
	PCB Models	1 pole	Standard Type	NO	AC3000V	AC1875VA	AC250V	12A	7.5A	12A	AC250V DC125V	DC5V 100mA
					DC360W	DC180W	DC30V	12A	6A			
				NC	AC3000V	AC1875VA	AC250V	12A	7.5A			
					DC180W	DC90W	DC30V	6A	3A			
High Capacity Type			NO	AC4000V	AC2000VA	AC250V	16A	8A	16A	AC250V DC125V	DC5V 100mA	
				DC480W	DC240W	DC30V	16A	8A				
			NC	AC4000V	AC2000VA	AC250V	16A	8A				
				DC240W	DC120W	DC30V	8A	4A				
2 poles		NO	AC2000V	AC1000VA	AC250V	8A	4A	8A	AC250V DC125V	DC5V 10mA		
			DC240W	DC120W	DC30V	8A	4A					
		NC	AC2000V	AC1000VA	AC250V	8A	4A					
			DC120W	DC60W	DC30V	4A	2A					

Coil Ratings

AC	Rated Voltage		Coil Voltage Code	Rated Current (mA) ±15% (at 20°C)				Coil Resistance (ohms)±10% (at 20°C)	Operating Characteristics²			Power Consumption
				Without LED¹		With LED¹			Minimum Pickup Voltage	Dropout Voltage	Maximum Allowable Voltage³	
				50Hz	60Hz	50Hz	60Hz					
	Blade & PCB Models	24V	A24	43.9	37.5	47.5	41.1	243	80% max	30% min	140%	0.9VA (60Hz)
120V		A120	8.8	7.5	8.7	7.4	6,400					
240V		A240	4.3	3.7	4.3	3.7	25,570					
Coil Ratings	Rated Voltage		Coil Voltage Code	Rated Current (mA) ±15% (at 20°C)				Coil Resistance (ohms)±10% (at 20°C)	Operating Characteristics²			Power Consumption
				Without LED¹		With LED¹			Minimum Pickup Voltage	Dropout Voltage	Maximum Allowable Voltage³	
	Blade Models	12V	D12	44.2		48.0		271				70% max
		24V	D24	22.1		25.7		1,080				
		48V	D48	11.0		10.7		4,340				
		100-110V	D100	5.3 - 5.8		5.2 - 5.7		18,870				
	PCB Models	5V	D5	106		—		47.2	70% max	10% min	170%	0.53-0.64W
		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%		

Notes:

1. LED Indicator is only available on Blade relays.

2. Operating characteristics are against rated values at 20°C.

3. The maximum allowable voltage is the maximum value which can be applied to the relay coils.

Accessories

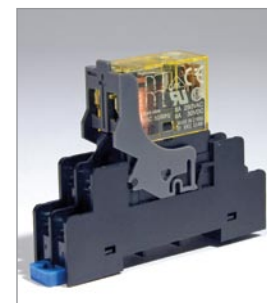
Socket Part Numbers

	Relay Type	Socket Type	Socket Part Number
Blade Models	RJ1S (Std)	DIN Rail Standard	SJ1S-05B
		DIN Rail Fingersafe	SJ1S-07L
		PCB Mount	SJ1S-61
	RJ1S-□H (HC), RJ2S	DIN Rail Standard	SJ2S-05B
		DIN Rail Fingersafe	SJ2S-07L
PCB Models	RJ1V (Std)	PCB Mount	SJ2S-61
		DIN Rail Fingersafe	SQ1V-07B*
	RJ1V-□H (HC), RJ2V	PCB Mount	SQ1V-63
		DIN Rail Fingersafe	SQ2V-07B*
		PCB Mount	SQ2V-63

*Hold-down clip or spring must be removed to use with RJ relays.

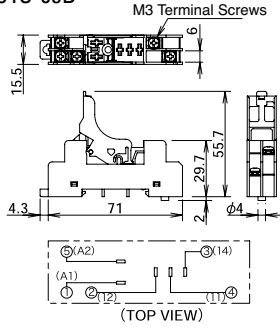
Socket Specifications

		SJ1S	SJ2S
Specifications	Rated Insulation Voltage	250V AC/DC	
	Applicable Wire	Max up to 2 - #14 AWG	
	Applicable Crimping Terminal	2mm ² x 2	
	Screw Size	M3 Slotted-Phillips screw	
	Weight	30g	34g

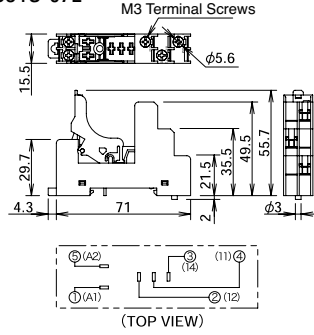


Socket Dimensions - for Blade Relays (mm)

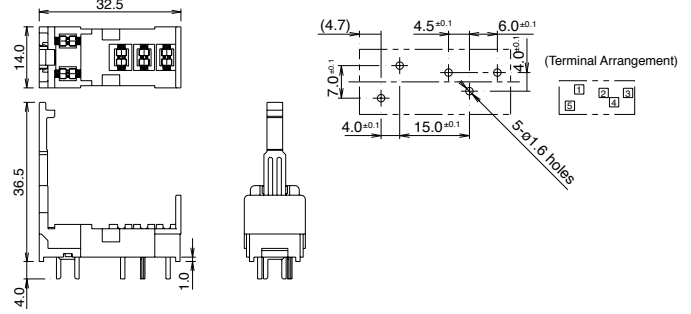
SJ1S-05B



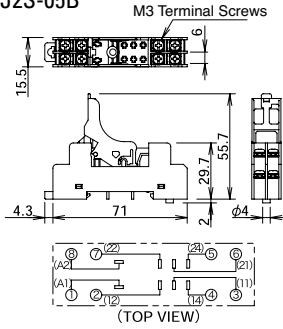
SJ1S-07L



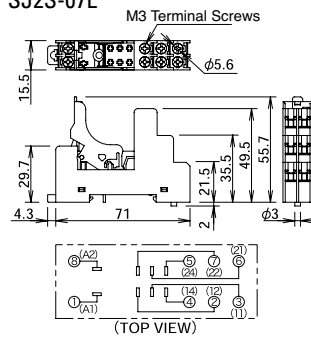
SJ1S-61



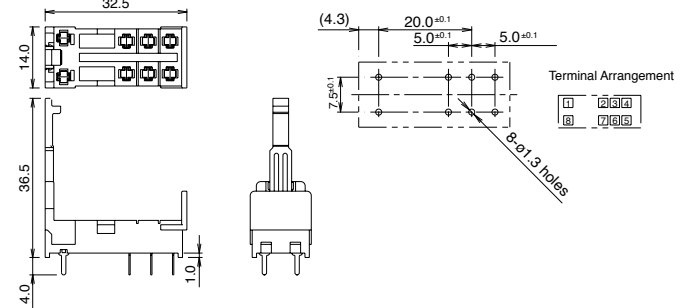
SJ2S-05B



SJ2S-07L

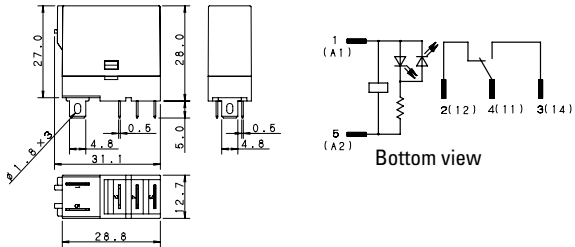


SJ1S-61

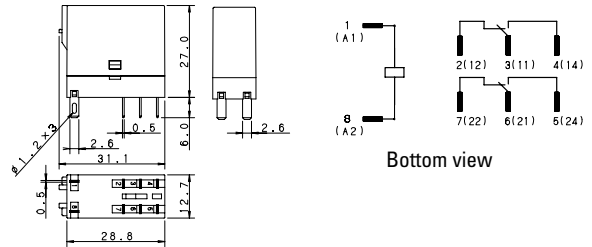


Blade Relay Dimensions (mm)

RJ1S

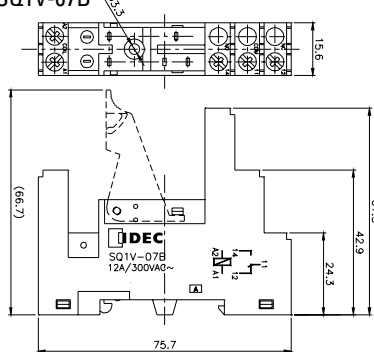


RJ2S

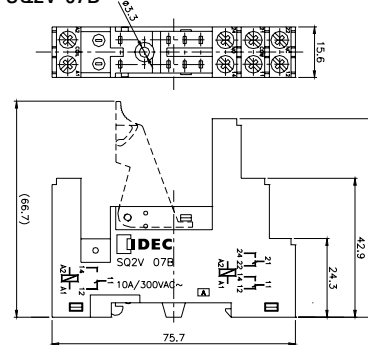


SQ Socket Dimensions - for PCB Relays (mm)

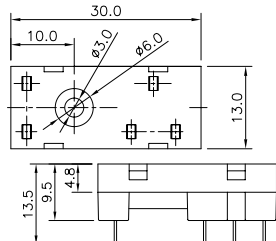
SQ1V-07B



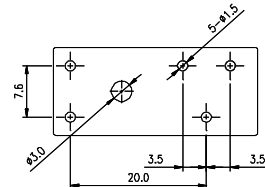
SQ2V-07B



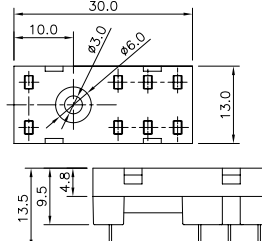
SQ1V-63



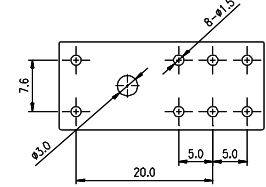
SQ1V-63 PCB pin layout



SQ2V-63



SQ2V-63 PCB pin layout

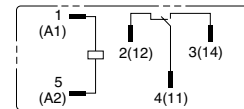
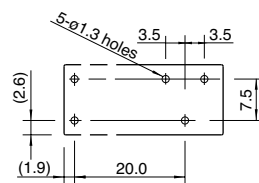
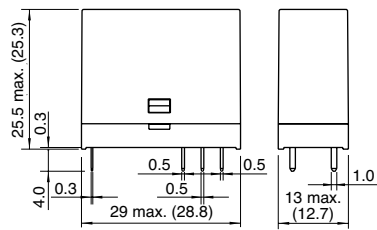


PCB Relay Dimensions (mm)

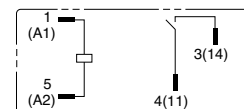
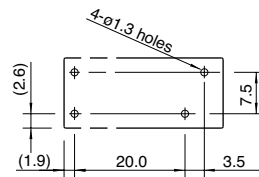
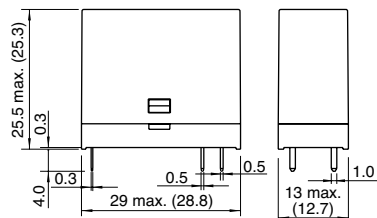
PCB Mounting Hole Layout (Bottom View)

PCB Internal Circuit Diagrams (Bottom View)

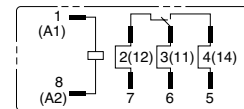
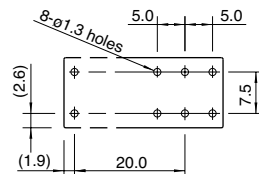
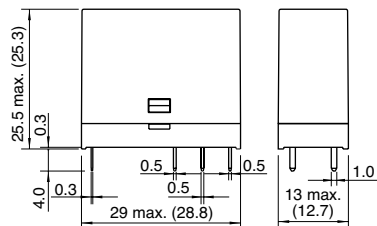
RJ1V-C-
SPDT



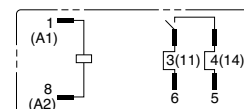
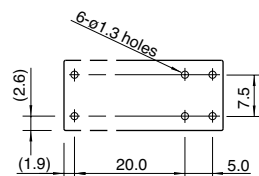
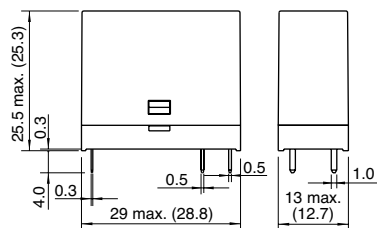
RJ1V-A-
SPST-NO



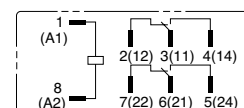
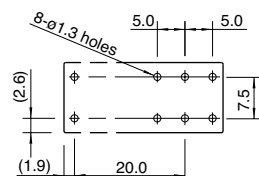
RJ1V-CH-
SPDT
High Capacity



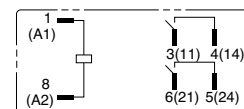
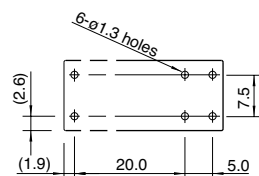
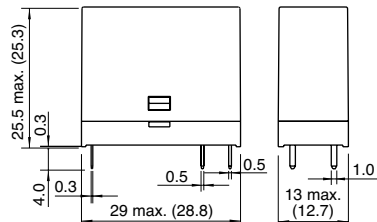
RJ1V-AH-
SPST-NO
High Capacity



RJ2V-C-
DPDT



RJ1V-A-
DPST-NO



For more information on the these
and other IDEC relays, visit:

www.idec.com/relay