





# R<sub>Y</sub> Series Minature Relays

## DPDT contact / 3A

R<sub>Y</sub> series are general purpose miniature relays with a 3A contact capacity.

Applicable Standards	Mark	Certification Organization/ File No.
UL508		UL recognized, File No. E55996
CSA C22.2 No. 14		CSA File No. LR35144
EN61810-1		TÜV SÜD
		EU Low Voltage Directive



## R<sub>Y</sub> Series

Terminal Style	Type	DPDT	
		Part No.	Coil Voltage Code □
Standard Terminal	Basic	RY2S-U□	AC6, AC12, AC24, AC50, AC100, DC6, DC12, DC24, DC48
			DC100, DC110
			AC110, AC115, AC120
			AC200, AC220, AC230, AC240
	With Indicator	RY2S-UL□	AC6, AC12, AC24, AC50, AC100 DC6, DC12, DC24, DC48
			DC100, DC110
			AC110, AC115, AC120
			AC200, AC220, AC230, AC240
	Top Bracket Mounting	RY2S-UT□	AC6, AC12, AC24, AC50, AC100, DC6, DC12, DC24, DC48
			DC100, DC110
AC110, AC115, AC120			
With Diode (DC coil only)	RY2S-UD□	DC6, DC12, DC24, DC48	
		DC100, DC110	
With Indicator and Diode (DC coil only)	RY2S-ULD□ (Note)	DC6, DC12, DC24, DC48	
		DC100, DC110	
PC board Terminal	Basic	RY2V-U□	AC6, AC12, AC24, AC50, AC100, DC6, DC12, DC24, DC48
			AC110, AC115, AC120
	With Indicator	RY2V-UL□	AC6, AC12, AC24, AC50, AC100 DC6, DC12, DC24, DC48
			AC110, AC115, AC120

Note) No applicable standards.

### Part No. Development

When ordering, specify the Part No. and coil voltage code.

(Example) RY2S-U AC100-110  
                   Part No.                   Coil Voltage Code

### Coil Ratings

Rated Voltage (V)	Rated Current (mA) ±15% at 20°C			Coil Resistance (Ω) ±10% at 20°C	Operation Characteristics (against rated values at 20°C)		
	50Hz	60Hz			Max. Continuous Applied Voltage	Min. Pickup Voltage	Dropout Voltage
	DPDT	DPDT	DPDT	DPDT			
AC (50/60Hz)	6	170	150	18.8	110%	80% maximum	30% minimum
	12	86	75	76.8			
	24	42	37	300			
	50	20.5	18	1,280			
	100	10.5	9	5,220			
	110	9.6	8.4	6,950			
	115	8.9	7.8	7,210			
	120	8.6	7.5	8,100			
	200	5.6	4.9	21,442			
	220	4.7	4.1	25,892			
	230	4.7	4.1	26,710			
240	4.9	4.3	26,710				
DC	DPDT	DPDT	DPDT		110%	80% maximum	10% minimum
	6	128	47				
	12	64	188				
	24	32	750				
	48	18	2,660				
	100	10	10,000				
	110	8	13,800				

### Standard Ratings

RY2

UL Ratings (Standard Contact)

Voltage	Resistive	General use
240V AC	3A	0.8A
120V AC	—	1.5A
100V DC	0.2A	0.2A
30V DC	3A	3A

CSA Ratings (Standard Contact)

Voltage	Resistive	General use
240V AC	3A	0.8A
120V AC	3A	1.5A
100V DC	—	0.2A
30V DC	3A	1.5A

TÜV Ratings (Standard Contact)

240V AC	3A
30V DC	3A

AC cos = 1.0,  
DC L/R=0ms

### Contact Ratings

Maximum Contact Capacity						
Contact	Continuous Current	Allowable Contact Power		Rated Load		
		Resistive Load	Inductive Load	Voltage	Resistive Load	Inductive Load
Standard Contact	3A	660 VA AC 90W DC	176 VA AC 45W DC	110V AC	3A	1.5A
				220V AC	3A	0.8A
				30V DC	3A	1.5A

## Specifications

Contact	DPDT
Contact Material	Gold-plated silver
Contact Resistance (*1)	50 mΩ maximum
Minimum Applicable Load	5V DC, 10 mA (reference value)
Operate Time (*2)	20 ms maximum
Release Time (*2)	20 ms maximum
Power Consumption (approx.)	AC: 1.1 VA (50 Hz), 1 VA (60 Hz) DC: 0.8W
Insulation Resistance	100 MΩ minimum (500V DC megger)
Dielectric Strength	Between live and dead parts: 1500V AC, 1 minute Between contact and coil: 1500V AC, 1 minute (*3) Between contacts of different poles: 1500V AC, 1 minute Between contacts of the same pole: 1000V AC, 1 minute
Operating Frequency	Electrical: 1,800 operations/h maximum Mechanical: 18,000 operations/h maximum
Vibration Resistance	Damage limits: 10 to 55 Hz, amplitude 0.5 mm Operating extremes: 10 to 55 Hz, amplitude 0.5 mm
Shock Resistance	Damage limits: 1,000 m/s <sup>2</sup> Operating extremes: 100 m/s <sup>2</sup>
Mechanical Life	50,000,000 operations
Electrical Life	200,000 operations (220V AC, 3A)
Operating Temperature (*4)	-25 to +50°C (no freezing)
Operating Humidity	45 to 85% RH (no condensation)
Storage Temperature	-55 to +70°C (no freezing)
Storage Humidity	45 to 85% RH (no condensation)
Weight (approx.)	23g

Note: Above values are initial values.

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

\*2) Measured at the rated voltage (at 20°C), excluding contact bouncing  
Release time of relays with diode: 40 ms maximum

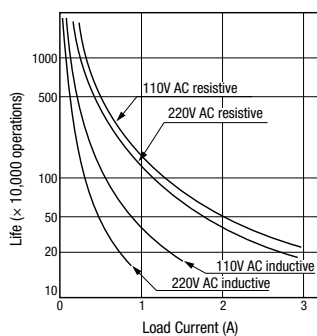
\*3) Relays with indicator or diode: 1000V AC, 1 minute

\*4) For use under different temperature conditions, refer to Continuous Load Current vs. Operating Temperature Curve.  
The operating temperature range of relays with indicator or diode is -25 to +40°C.

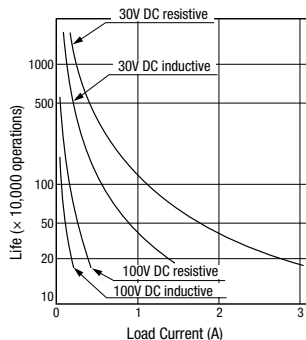
## Characteristics (Reference Data)

### Electrical Life Curve

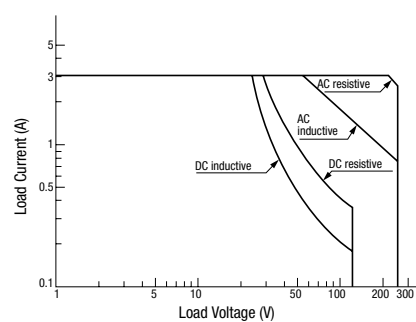
#### AC Load



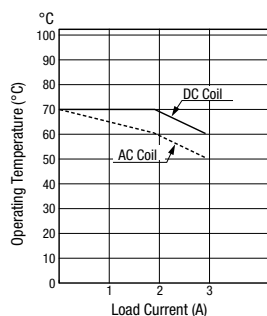
#### DC Load



### Maximum Switching Capacity

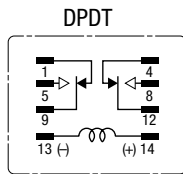


### Continuous Load Current vs. Operating Temperature Curve (Basic, With Check Button, and Top Bracket Mounting)

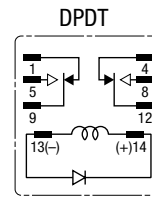


Internal Connection (Bottom View)

Basic (-U, UT)



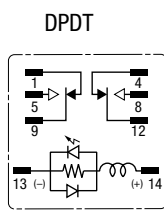
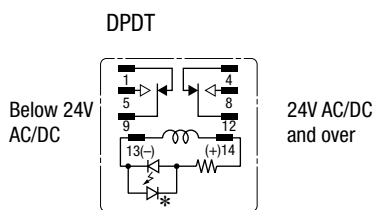
With Diode (-UD)



Contains a diode to absorb the counter emf generated when the coil is deenergized. Coil is for DC only. The release time is slightly longer.

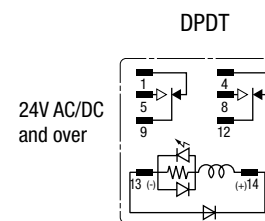
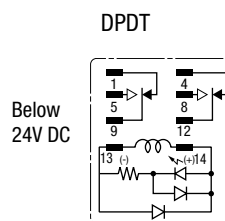
- Diode Characteristics  
Reverse withstand voltage: 1,000V  
Forward current: 1A

With Indicator (-UL)



When the relay is energized, the indicator lights on.

With Indicator and Diode (-ULD)



Contains an operation indicator and a surge absorber, and has the same height as the basic type.

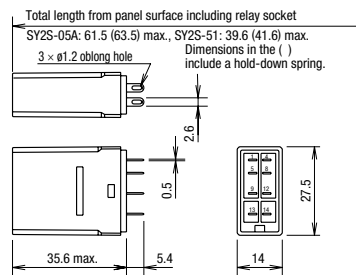
Dimensions

Plug-in Terminal  
RY2S-U / RY2S-UL  
RY2S-UD

Dimensions in mm.



(Photo: RY2S-U)



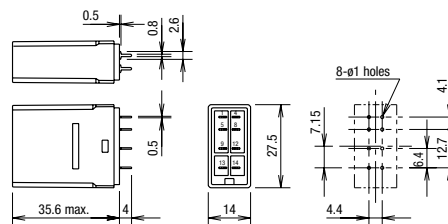
Applicable Socket and Hold-down Spring

	Item	Part No.
For surface wiring	Socket	SY2S-05
	Hold-down spring	SFA-202 SFA-101
For rear wiring	Solder terminal	SY2S-51
	PC board terminal	SY2S-61
	Hold-down spring	SY4S-51F1 SFA-302 SFA-301

PC Board Terminal  
RY2V-U / RY2V-UL



(Photo: RY2V-U)



Top Bracket Mounting (Solder Terminal)

RY2S-UT

