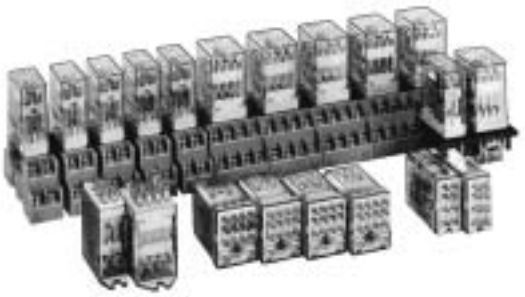
RY/RM Series — General Purpose Miniature Relays

Key features of the RY series include:

- **Compact miniature size saves space**
- **2PDT and 4PDT models, available with bifurcated crossbar contacts, ensure reliable low-current switching for dry circuit applications**
- **Choice of plug-in/solder or PCB type terminals**
- **Options include check button for test operation and indicator lights**
- **DIN rail, surface, panel, and PCB type sockets available for a wide range of mounting applications**



Specifications

Contact Material		**RY2, RY4:** Silver (Ag), gold-plated **RY22, RY42:** Ag-Pd alloy **RM:** Silver (Ag)
Contact Resistance		**RY2, RY4:** 50mΩ maximum **RY22, RY42:** 100mΩ maximum **RM:** 30mΩ maximum
Minimum Applicable Load		**RY2, RY4:** 5V DC, 10mA/24V DC, 5mA **RM2:** 24VDC/10mA, 5VDC/20mA (reference value) Bifurcated contacts: **RY22, RY42:** 1V DC, 100µA (reference value)
Operating Time		20ms maximum
Release Time		20ms maximum
Maximum Continuous Applied Voltage (AC/DC) at 20°C		110% of the rated voltage
Minimum Operating Voltage (AC/DC) at 20°C		80% of the rated voltage
Drop-Out Voltage (AC)		30% or more of the rated voltage
Drop-Out Voltage (DC)		10% or more of the rated voltage
Power Consumption		**RY2, RY22:** DC: approximately 0.8W AC: approximately 1.1VA (50Hz), 1VA (60Hz) **RY4, RY42, RM2:** DC: approximately 0.9W AC: approximately 1.4VA (50Hz), 1.2VA (60Hz)
Insulation Resistance		100MΩ minimum (measured with 500V DC megger)
Dielectric Strength		**RY2, RY22:** Between live and dead parts: 1,500V AC, 1 minute; Between contact and coil: 1,500V AC, 1 minute; Between contacts of different poles: 1,500V AC, 1 minute; Between contacts of the same pole: 1,000V AC, 1 minute **RY4, RY42, RM2,:** Between live and dead parts: 2,000V AC, 1 minute; Between contact and coil: 2,000V AC, 1 minute; Between contacts of different poles: 2,000V AC, 1 minute; Between contacts of the same pole: 1,000V AC, 1 minute
Frequency Response		1,800 operations/hour
Temperature Rise		Coil: 85°C maximum Contact: 65°C maximum
Vibration Resistance		0 to 6G (55Hz maximum)
Shock Resistance		**RY2, RY22:** 100N (approximately 10G) **RY4, RY42, RM2:** 200N (approximately 20G)
Life Expectancy	**Electrical**	**RY2, RY4:** over 200,000 operations (120V, 3A) **RY22, RY42:** over 200,000 operations (120V AC, 1A) **RM2:** over 500,00 operations (240V AC, 5A)
	Mechanical	over 50,000,000 operations
Operating Temperature		–30 to +70°C
Weight		DPDT: 23g; 4PDT: 34g (approximately)

UL Recognized
File No. E55996

CSA Certified
File No.LR35144

TÜV PRODUCT SERVICE
File No. B020813332452

CE

Ordering Information

Order standard voltages for fastest delivery. Allow extra delivery time for non-standard voltages.

Basic Part No.	Coil Voltage:
RY4S-U	AC110-120V

Part Numbers

Part Numbers: RY/RM Series with Options

Termination	Contact Configuration	Basic Part No.	Indicator Light	Check Button	Indicator Light and Check Button	Top Bracket
S Solder/plug-in	DPDT small footprint	RY2S-U	RY2S-UL	RY2S-UC	RY2S-ULC	RY2S-UT
	DPDT (bifurcated contacts)	RY22S-U	RY22S-UL	—	—	RY22S-UT
	DPDT wide footprint	RM2S-U	RM2S-UL	RM2S-UC	RM2S-ULC	RM2S-UT
	4PDT	RY4S-U	RY4S-UL	RY4S-UC	RY4S-ULC	RY4S-UT
	4PDT (bifurcated contacts)	RY42S-U	RY42S-UL	RY42S-UC	RY42S-ULC	RY42S-UT
V PCB 0.031" (0.8mm) wide	DPDT small footprint	RY2V-U	RY2V-UL	RY2V-UC	RY2V-ULC	—
	DPDT (bifurcated contacts)	RY22V-U	RY22V-UL	—	—	—
	DPDT wide footprint	RM2V-U	RM2V-UL	RM2V-UC	RM2V-ULC	—
	4PDT	RY4V-U	RY4V-UL	RY4V-UC	RY4V-ULC	—
	4PDT (bifurcated contacts)	RY42V-U	RY42V-UL	RY42V-UC	RY42V-ULC	—

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Relays

Ratings

Coil Ratings

Rated Voltage (V)		Rated Current ±15% at 20°C				Coil Resistance ±10% at 20°C		Coil Inrush (60Hz)		Coil Inductance			
		60Hz		50Hz						Energizing		De-Energizing	
		RY2, RY22	RM2, RY4, RY42	RY2, RY22	RM2, RY4, RY42	RY2, RY22	RM2, RY4, RY42	RY2, RY22	RM2, RY4, RY42	RY2, RY22	RM2, RY4, RY42	RY2, RY22	RM2, RY4, RY42
AC	6V	150mA	200mA	170mA	240mA	18.8Ω	9.4Ω	250mA	340mA	0.09H	0.08H	0.06H	0.04H
	12V	75mA	100mA	86mA	121mA	76.8Ω	39.3Ω	120mA	170mA	0.37H	0.30H	0.22H	0.16H
	24V	37mA	50mA	42mA	60.5mA	300Ω	153Ω	56mA	85mA	1.5H	1.2H	.9H	0.63H
	120V*	7.5mA	11mA	8.6mA	13.1mA	7,680Ω	4,170Ω	12mA	16mA	37H	33H	22H	15H
	240V †	3.2mA	5.5mA	3.7mA	6.6mA	31,200Ω	15,210Ω	7mA	8mA	130H	130H	77H	62H

		RY2, RY22	RM2, RY4, RY42	RY2, RY22	RM2, RY4, RY42	
DC	6V	128mA	150mA	47Ω	40Ω	N/A
	12V	64mA	75mA	188Ω	160Ω	
	24V	32mA	36.9mA	750Ω	650Ω	
	48V	18mA	18.5mA	2,660Ω	2,600Ω	
	110V‡	—	9.1mA	—	12,100Ω	

** For RY4/RY42/RM2 relays = AC110/120V AC.*
† For RY4/RY42/RM2 relays = 220/240V AC.
‡ For RY4/RY42/RM2 relays = 100/110V DC.

Contact Ratings (gold plated) RY4, RY2

		Resistive		Inductive	
Voltage	Contact	UL	CSA	UL	CSA
30V DC	DPDT	3A	3A	3A	1.5A
	4PDT	5A	5A	5A	1.5A
100V DC	DPDT	0.2A	—	0.2A	0.2A
	4PDT	0.2A	—	0.2A	0.2A
120V AC	DPDT	3A	3A	1.5A	1.5A
	4PDT	5A	5A	5A	5A
240V AC	DPDT	3A	3A	0.8A	0.8A
	4PDT	5A	5A	5A	5A

Contact Ratings (bifurcated) RY42, RY22

Voltage	Resistive UL/CSA	Inductive UL/CSA
30V DC	1A	0.5A
120V AC	1A	0.5A
240V AC	0.8A	0.4A

Contact Ratings RM2

	Resistive			Inductive		
Voltage	Nominal	UL	CSA	Nominal	UL	CSA
30V DC	5A	5A	5A	2.5A	—	2.5A
110V DC	0.4A	0.4A	—	0.4A	—	0.4A
120V AC	5A	5A	5A	2.5A	2.5A	2.5A
240V AC	5A	5A	5A	2A	2A	2A