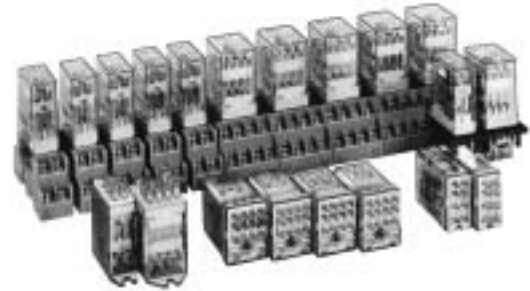


RY/RM Series — General Purpose Miniature Relays

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



| | |
|---|---|
| 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



File No. B020813332452



Ordering Information

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

Basic Part No.

RY4S-U

Coil Voltage:

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 | — |

E

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 | | RY2, RY22 | RM2, RY4, RY42 | RY2, RY22 | RM2, RY4, RY42 | Energizing | | De-Energizing | | |
| | 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 |
| DC | | RY2, RY22 | | RM2, RY4, RY42 | | RY2, RY22 | RM2, RY4, RY42 | N/A | | | | | |
| | 6V | 128mA | | 150mA | | 47Ω | 40Ω | | | | | | |
| | 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

| Voltage | Contact | Resistive | | Inductive | |
|---------|---------|-----------|-----|-----------|------|
| | | 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

| Voltage | Resistive | | | Inductive | | |
|---------|-----------|------|-----|-----------|------|------|
| | 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 |