

RR2KP Series — Magnetic Latching Relays

Key features of the RR2KP series include:

- Standard octal base (11-pin) termination
- Operates by pulse input and maintains condition even during power failure
- Coils rated for continuous duty
- High vibration and shock resistance
- Excellent self-holding performance (magnetic latch)
- Optional manual check button for circuit testing
- DIN rail, surface, and panel mount sockets available for a wide range of mounting applications



UL Recognized
File No. E67770



CSA Certified
File No. LR35144

Specifications	Contact Material	Silver
	Contact Resistance	30mΩ maximum (initial value)
	Minimum Applicable Load	5V DC, 100mA
	Operating Time	25ms maximum
	Power Consumption	AC: approximately 2.4VA (50Hz), 2.2VA (60Hz) DC: approximately 1.5W
	Insulation Resistance	100MΩ minimum (with 500V DC megger)
	Dielectric Strength	Between live and dead parts: 1,500V AC, 1 minute Between contact circuit and opposite coil: 1,500V AC, 1 minute Between contact circuits: 1,500V AC, 1 minute (1,000V between NO-NC contacts)
	Frequency Response	1,800 operations/hour
	Temperature Rise	Coil: 85C maximum; Contact: 65C maximum
	Vibration Resistance	0 to 6G (55Hz maximum)
	Shock Resistance	100N (approximately 10G)
	Life Expectancy	Electrical: over 500,000 operations (120V, 10A) Mechanical: over 5,000,000 operations
	Operating Temperature	-30 to +70C
	Weight	170g (approximately)

Operational Characteristics

Maximum Continuous Applied Voltage (AC/DC) at 20C	110% of the rated voltage without overheating
Maximum Set and Reset Voltage at 20C	80% of the rated voltage

Ordering Information

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

Basic Part No. **Coil Voltage:**
RR2KP-U AC230V

Part Numbers

Part Numbers: RR2KP Series

Termination	Contact Configuration	Standard	With Check Button
P: 11-Pin	DPDT	RR2KP-U	RR2KP-UC

Part Numbers: Sockets

Relay	Snap DIN Rail Mount	Finger-Safe DIN Rail Mount	Panel	Spring (optional)
RR2KP	SR3P-05 SR3P-06	SR3P-05C	SR3P-51	SR3P-06F3 SR3P-51F3



1. See Section F for details on sockets. All DIN rail mount sockets shown above can be mounted using DIN rail BNDN1000.

Ratings

Coil Ratings

Rated Voltage	Rated Current $\pm 15\%$ at 20C		Coil Resistance $\pm 10\%$ at 20C	
	60Hz	50Hz		
AC	6V	429mA	467mA	3.5 Ω
	12V	184mA	200mA	23.8 Ω
	24V	92mA	100mA	95 Ω
	120V	22mA	24mA	2,200 Ω
	240V	10.6mA	11.5mA	9,190 Ω
DC	6V	240mA		25 Ω
	12V	120mA		100 Ω
	24V	60mA		400 Ω
	48V	30mA		1,600 Ω
	110V	13.8mA		7,960 Ω

Contact Ratings

Resistive Voltage				Inductive		
	Nominal	UL	CSA	Nominal	UL	CSA
30V DC	10A	10A	10A	7.5A	7A	7.5A
100V DC	0.5A	—	—	0.5A	—	0.5A
120V AC	10A	10A	10A	7.5A	7.5A	7.5A
240V AC	7.5A	10A	10A	5A	7A	7A



2. Inductive load $\cos \phi = 0.3$, $L/R = 7ms$.

3. UL/CSA motor load rating 1/4 HP at 120V AC and 1/3 HP at 240V AC.

RH2L Series — Magnetic Latching Relays

Key features of the RH2L series include:

- Compact miniature size saves board space
- Power-saving operation by pulse inputs eliminates the need for continuous control voltage
- Coils rated for continuous duty
- Built-in operation indicator to show set/reset condition
- Available with blade and PC mount terminals
- DIN rail, surface, panel, and PCB type sockets available for a wide range of mounting applications
- Excellent self-holding performance (magnetic latching)



UL Recognized
File No. E67770



CSA Certified
File No. LR35144

Specifications	Contact Material	Silver cadmium oxide
	Contact Resistance	50mΩ or less (initial value)
	Minimum Applicable Load	5V DC, 100mA
	Operating Time	30ms (AC); 20 ms (DC)
	Set Time	30ms or less (AC); 20ms or less (DC)
	Reset Time	30ms or less (AC); 20ms or less (DC)
	Power Consumption	Set coil: AC: approximately 1.2V; DC: approximately 2W Reset coil: approximately 0.5VA; DC: approximately 0.9W
	Insulation Resistance	100MΩ minimum
	Dielectric Strength	Between live and dead parts: 2,000V AC, 1 minute Between contact circuit and opposite coil: 2,000V AC, 1 minute Between contact circuits: 1,500V AC, 1 minute Between contacts of same pole: 1,000V AC, 1 minute
	Frequency Response	1,800 operations/hour
	Vibration Resistance	60N (approximately 6G) Maximum frequency 55Hz
	Shock Resistance	100N or more (approximately 10G)
	Life Expectancy	Electrical: over 200,000 operations Mechanical: over 10,000,000 operations
	Operating Temperature	-30 to +70C
Weight	50g	

Operational Characteristics

Maximum Continuous Applied Voltage (AC/DC)	110% of rated voltage
Minimum Set and Reset Voltage at 20C	80% of rated voltage

Ordering Information

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

Basic Part No.	Coil Voltage:
<u>RH2LB-U</u>	<u>DC24V</u>

Part Numbers

Part Numbers: RH2L Series

Termination	Contact Configuration	Part No.
B: Blade	DPDT	RH2LB-U
V2: PCB - 2mm	DPDT	RH2LV2-U

Part Numbers: Sockets

Relay	Standard DIN Rail Mount	Finger-Safe DIN Rail Mount	Panel Mount	PC Mount	Spring (optional)
RH2LB	SH3B-05	SH3B-05C	SH3B-51	SH3B-62	SFA-101 SY4S-51F1

Ratings

Coil Ratings

Rated Voltage	Set Coil				Reset Coil		
	Rated Current $\pm 15\%$ at 20C		Coil Resistance $\pm 10\%$ at 20C	Rated Current $\pm 15\%$ at 20C		Coil Resistance $\pm 10\%$ at 20C	
	60Hz	50Hz		60Hz	50Hz		
AC	6V	220mA	227mA	8.8 Ω	68mA	68.7mA	6.9 Ω
	12V	100mA	103mA	41.6 Ω	34mA	34.2mA	30.2 Ω
	24V	50mA	51.2mA	182 Ω	17.1mA	17.1mA	105 Ω
	120V	10mA	10.3mA	4,670 Ω	4.2mA	4.2mA	2,680 Ω
DC	6V	333mA		18 Ω	150mA		40 Ω
	12V	167mA		72 Ω	75mA		160 Ω
	24V	83mA		288 Ω	37.5mA		640 Ω
	48V	42mA		1,150 Ω	18.8mA		2,560 Ω

Contact Ratings

Voltage	Resistive		Inductive		Motor Load	
	UL	CSA	UL	CSA	UL	CSA
30V DC	10A	10A	—	7.5A	—	—
120V AC	10A	10A	7.5A	7.5A	1/6HP	1/6HP
240V AC	7.5A	7.5A	6.5A	5A	1/3HP	1/3HP

RY2KS Series — Miniature Magnetic Latching Relays

Key features of the RY2KS series include:

- Standard “ice cube” base, solder lug (14-pin) termination
- Operates by pulse input and maintains condition even during power failure
- High vibration and shock resistance
- Excellent self-holding performance
- Optional manual check button for circuit testing
- DIN rail, surface, and panel mount sockets available for a wide range of mounting applications
- UL recognized and CSA certified



UL Recognized
File No. E55996



CSA Certified
File No. LR35144

Specifications	Contact Material	Silver, gold-plated
	Contact Resistance	50mΩ maximum (initial value)
	Minimum Applicable Load	5V DC, 100mA
	Operating Time	25ms maximum
	Release Time	25ms maximum
	Power Consumption	AC: approximately 1.6V (50Hz), 1.5VA (60Hz) DC: approximately 1.2W
	Insulation Resistance	100MΩ minimum (with 500V DC megger)
	Dielectric Strength	Between live and dead parts: 1,500V AC, 1 minute Between contact circuit and opposite coil: 1,000V AC, 1 minute Between contact circuits: 1,000V AC, 1 minute (700V between NO-NC contacts)
	Frequency Response	1,800 operations/hour
	Temperature Rise	Coil: 85C maximum Contact: 65C maximum
	Vibration Resistance	0 to 6G (55Hz maximum)
	Shock Resistance	20G minimum
	Life Expectancy	Electrical: over 200,000 operations (240V AC, 3A) Mechanical: over 5,000,000 operations
	Operating Temperature	-30 to +70C
Weight	67g (approximately)	

Operational Characteristics

Maximum Continuous Applied Voltage (AC/DC) at 20C	110% of the rated voltage
Set and Reset Voltages (AC/DC) at 20C	80% of the rated voltage

Ordering Information

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

Basic Part No.	Coil Voltage:
<u>RY2KS-U</u>	<u>DC24V</u>

Part Numbers

Part Numbers: RY2KS Series

Termination	Contact Configuration	Standard	With Check Button
S: Solder/plug-in	DPDT	RY2KS-U	RY2KS-UC

Part Numbers: Sockets

Relay	Standard DIN Rail Mount	Finger-Safe DIN Rail Mount	Panel Mount	PC Mount	Spring (optional)
RY2KS	SY4S-05	SY4S-05C	SY4S-51	SY4S-61 SY4S-62	SFA-202 SY4S-51F3

Ratings

Coil Ratings

Rated Voltage	Rated Current $\pm 15\%$ at 20C		Coil Resistance $\pm 10\%$ at 20C	
	60Hz	50Hz		
AC	6V	250mA	260mA	6.3 Ω
	12V	115mA	120mA	30.3 Ω
	24V	56mA	58mA	132 Ω
	120V	10.8mA	11.2mA	3,840 Ω
DC	6V	200mA		30 Ω
	12V	100mA		120 Ω
	24V	50mA		480 Ω
	48V	25mA		1,920 Ω
	110V	11mA		10,000 Ω

Contact Ratings

Voltage	Resistive			Inductive		
	Nominal	UL	CSA	Nominal	UL	CSA
30V DC	3A	3A	3A	1.5A	—	1.5A
100V DC	0.2A	—	—	0.12A	—	0.2A
120V AC	3A	3A	3A	1.5A	1.5A	1.5A
240V AC	3A	3A	3A	0.8A	0.8A	0.8A



2. Inductive load $\cos \phi = 0.3$, $L/R = 7ms$.

RY2L Series — Miniature Magnetic Latching Relays

Key features of the RY2L series include:

- Standard “ice cube,” 14-pin solder lug termination
- Operates by pulse input and maintains condition even during power failure
- Coils rated for continuous duty
- Excellent self-holding performance (magnetic latch)
- Built-in operation indicator to show set/reset condition
- DIN rail, surface, and panel mount sockets available for a wide range of mounting applications



UL Recognized
File No. E55996



CSA Certified
File No. LR35144

Specifications	Contact Material	Silver, gold-plated
	Contact Resistance	50mΩ or less (initial value)
	Minimum Applicable Load	5V DC, 100mA
	Operating Time	30ms or less (AC); 20ms or less (DC)
	Release Time	30ms or less (AC); 20ms or less (DC)
	Power Consumption	Set coil: DC: approximately 1.2W AC: approximately 0.75VA (50Hz); 0.7VA (60Hz) Reset coil: DC: approximately 0.60W AC: approximately 0.35VA
	Insulation Resistance	100MΩ minimum
	Dielectric Strength	Between live and dead parts: 1,500V AC, 1 minute Between contact circuit and operating coil: 1,000V AC, 1 minute Between contact circuits: 1,000V AC, 1 minute Between contacts of same pole: 700V AC, 1 minute
	Response Frequency	1,800 operations/hour
	Vibration Resistance	60N (0–6G); Maximum frequency 55Hz
	Shock Resistance	100N or more (10G or more)
	Life Expectancy	Electrical: 200,000 operations Mechanical: 10,000,000 operations
	Operating Temperature	–30 to +70C
	Weight	34g (approximately)

Operational Characteristics

Maximum Continuous Applied Voltage (AC/DC) at 20C	110% of the rated voltage
Set and Reset Voltages (AC/DC) at 20C	80% of the rated voltage

Ordering Information

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

Basic Part No.	Coil Voltage:
<u>RY2LS-U</u>	<u>DC24V</u>

Part Numbers

Part Number: RY2L Series

Termination	Contact Configuration	Part No.
S: Solder/plug-in	DPDT	RY2LS-U
V: PCB — 0.8mm wide	DPDT	RY2LV-U

Part Numbers: Sockets

Relay	Standard DIN Rail Mount	Finger-Safe DIN Rail Mount	Panel Mount	PC Mount	Spring (Optional)
RY2LS	SY4S-05	SY4S-05C	SY4S-51	SY4S-61 SY4S-62	SFA-101 SFA-202 SFA-301 SFA-302 SY4S-51F1

Ratings

Coil Ratings

Rated Voltage	Set Coil				Reset Coil		
	Rated Current $\pm 15\%$ at 20C		Coil Resistance $\pm 10\%$ at 20C	Rated Current $\pm 15\%$ at 20C		Coil Resistance $\pm 10\%$ at 20C	
	60Hz	50Hz		60Hz	50Hz		
AC	6V	120mA	127mA	14.3 Ω	61mA	61.8mA	7.8 Ω
	12V	60mA	64mA	64.6 Ω	30.5mA	31.1mA	34.1 Ω
	24V	30mA	32mA	282 Ω	14.2mA	14.4mA	127 Ω
	120V	6mA	6.3mA	7,480 Ω	2.8mA	2.8mA	3,380 Ω
DC	6V	200mA		30 Ω	100mA		60 Ω
	12V	100mA		120 Ω	51mA		235 Ω
	24V	51mA		470 Ω	25.5mA		940 Ω
	48V	25.5mA		1,880 Ω	12.8mA		3,760 Ω

Contact Ratings

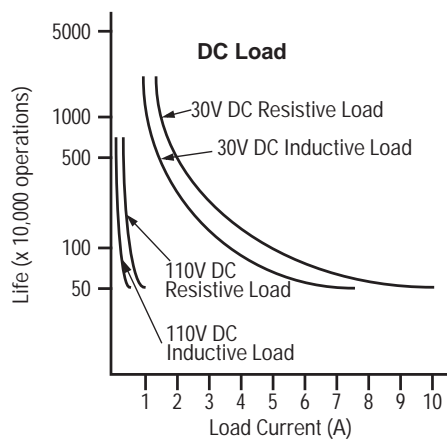
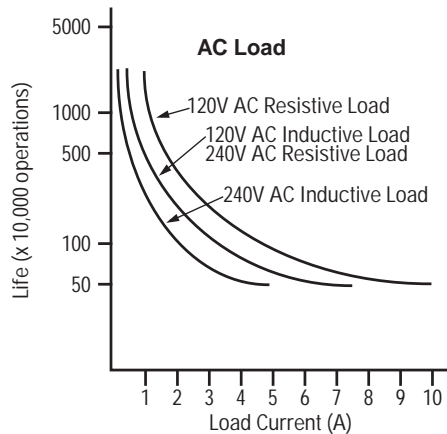
Voltage	Resistive			Inductive		
	Nominal	UL	CSA	Nominal	UL	CSA
30V DC	3A	3A	3A	1.5A	—	1.5A
110V DC	—	—	—	0.2A	—	0.2A
120V AC	3A	3A	3A	1.5A	1.5A	1.5A
240V AC	3A	3A	3A	0.8A		



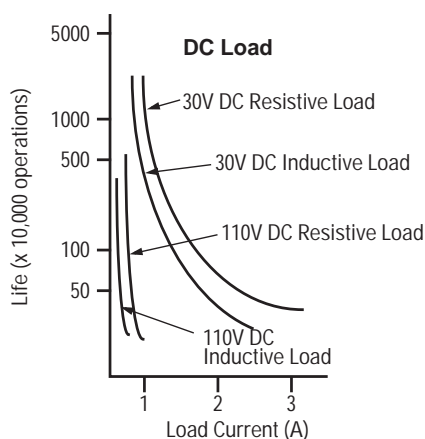
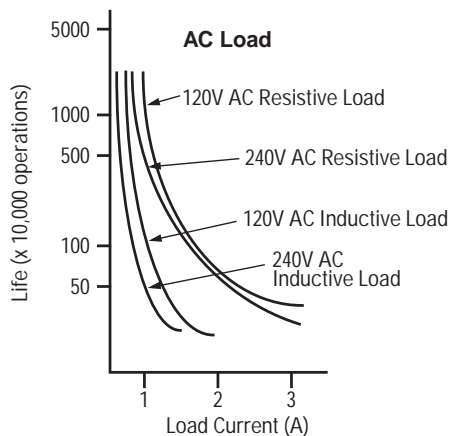
2. Inductive load $\cos \phi = 0.3$, $L/R = 7ms$.

Electrical Life Curves — Latching Relays

RR2KP Series



RY2KS Series

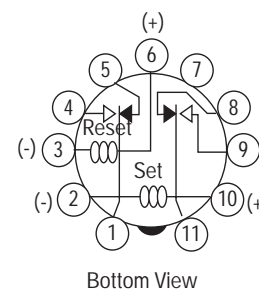


Instructions

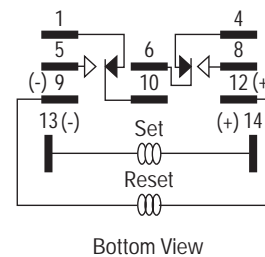
- Set/reset coils should not be energized at the same time.
- Do not use relays in environments where magnetic particles are present in significant quantities or near external magnetic fields such as high current circuits.
- Avoid using in circuits where large power surges occur.
- Maintain minimum 0.234" (6mm) clearance between relays.
- Observe polarity of DC types.

Internal Circuits

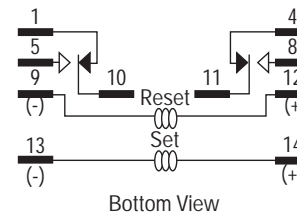
RR2KP Series



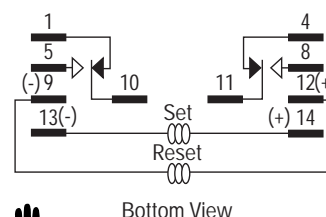
RH2L Series



RY2KS Series



RY2L Series

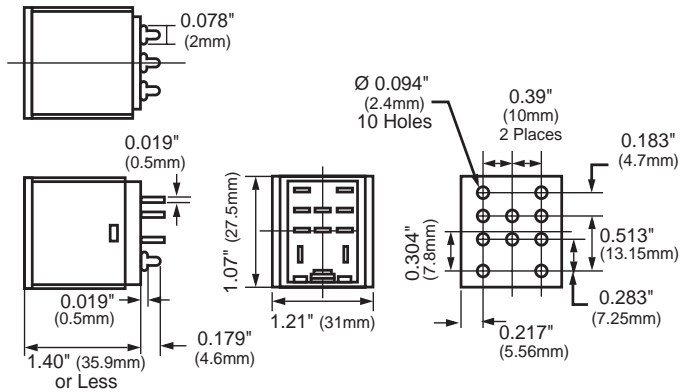


All relays are shown in the reset (unlatched) position.

Dimensions

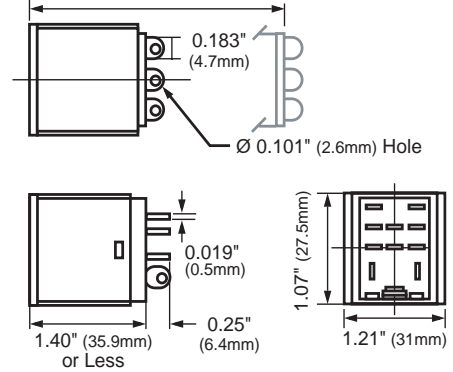
RH2L Series

PCB Terminal RH2LV2



Plug-in RH2LB

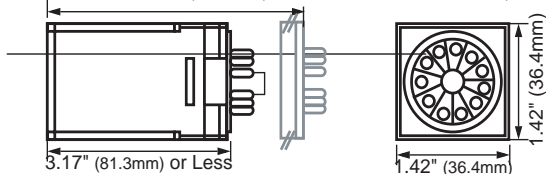
Total length from panel surface including socket;
SH3B-05: 2.40" (61.6mm) maximum
 Total length from panel surface including hold-down spring;
SH3B-05: 2.48" (63.6mm) maximum



RR2KP Series

Plug-in RR2KP

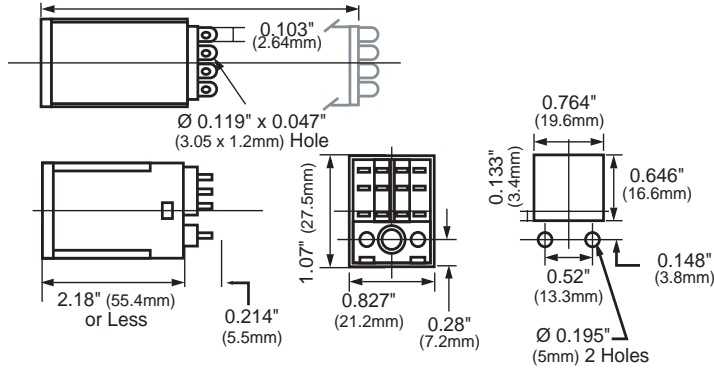
Total length from panel surface including socket:
SR3P-05: 4.13" (106mm) maximum; **SR3P-51**: 3.45" (88.4mm) maximum
 Total length from panel surface including hold down springs:
SR3P-05: 4.27" (109.5mm) maximum; **SR3P-51**: 3.62" (92.9mm) maximum



RY2KS Series

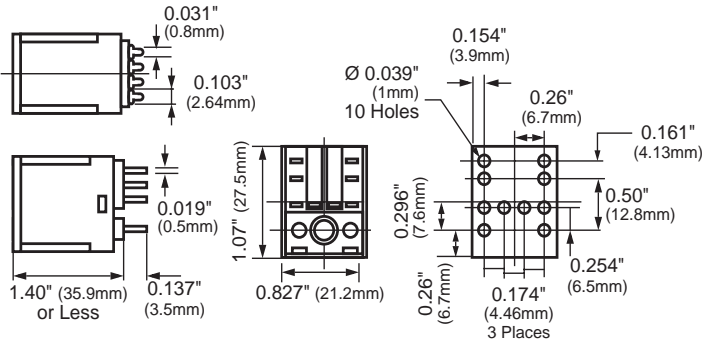
**Plug-in
RY2KS**

Total length from panel surface including socket:
SY4S-05: 3.20" (82.1mm) maximum; **SY4S-51:** 2.34" (59.9mm)
 Total length from panel surface including hold-down spring:
SY4S-05: 3.28" (84.1mm) maximum; **SY4S-51:** 2.45" (62.9mm)



RY2L Series

**PCB Terminal
RY2LV**



**Plug-in
RY2LS**

Total length from panel surface including socket:
SY4S-05: 2.42" (62.1mm) maximum; **SY4S-51:** 1.56" (40mm)
 Total length from panel surface including hold-down spring:
SY4S-02: 2.50" (64.1mm) maximum; **SY4S-51:** 1.64" (42mm)

