

RR series Power Relays

Heavy-duty power type relays Large capacity 10A — 1, 2, and 3 poles

- Available in pin and blade terminal styles.
- Options include an indicator, check button for test operation, and side flange.
- DIN rail, surface, and panel mount sockets are available for a wide variety of mounting applications.



Types

Termination	Type	Type No.			Coil Voltage Code *
		SPDT	DPDT	3PDT (Note)	
Pin Terminal	Basic	—	RR2P-U* ★	RR3P-U* ★	AC6, AC12, AC24, AC50, AC100, AC110, AC115, AC120, AC200, AC220, AC230, AC240, DC6, DC12, DC24, DC48, DC110
	With Indicator	—	RR2P-UL* ★	RR3P-UL* ★	
	With Check Button	—	RR2P-UC* ★	RR3P-UC* ★	
	With Indicator and Check Button	—	RR2P-ULC* ★	RR3P-ULC* ★	
Blade Terminal	Basic	RR1BA-U*	RR2BA-U*	RR3B-U*	AC6, AC12, AC24, AC50, AC100, AC110, AC115, AC120, AC200, AC220, AC230, AC240, DC6, DC12, DC24, DC48, DC110
	With Indicator	RR1BA-UL*	RR2BA-UL*	RR3B-UL*	
	With Check Button	RR1BA-UC*	RR2BA-UC*	RR3B-UC*	
	With Indicator and Check Button	RR1BA-ULC*	RR2BA-ULC*	RR3B-ULC*	
	Side Flange Type	RR1BA-US*	RR2BA-US*	RR3B-US*	

Note:

Both RR3P and RR3PA are 3PDT relays and have different terminal arrangements. See Internal Connection on page 363.

Type numbers marked with ★ in the table above are UL-recognized, CSA-certified, and TÜV-approved. Others are UL-recognized and CSA-certified.

Ordering Information

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

(Example) **RR3P-U** **AC110**
Type 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	Minimum Pickup Voltage	Dropout Voltage
AC (50/60Hz)	6	490	420	110%	80% maximum	30% minimum
	12	245	210			
	24	121	105			
	50	58	50			
	100	29	25			
	110	27	23			
	115	25	21.5			
	120	24	20.5			
	200	14.5	12.5			
	220	13.3	11.5			
	230	12.7	11			
240	12.1	10.5				
DC	6	240		110%	80% maximum	15% minimum
	12	120				
	24	60				
	48	30				
	110	13				

RR series Power Relays

Contact Ratings

Maximum Contact Capacity					
Continuous Current	Allowable Contact Power		Rated Load		
	Resistive Load	Inductive Load	Voltage	Resistive Load	Inductive Load
10A	1650VA AC 300W DC	1100VA AC 150W DC	110V AC	10A	7.5A
			220V AC	7.5A	5A
			30V DC	10A	5A

Note: Inductive load for the rated load — $\cos \phi = 0.3$, L/R = 7 ms

• UL Ratings

Voltage	Resistive	General use	Horse Power Rating
240V AC	10A	7A	1/3 HP
120V AC	10A	7.5A	1/4 HP
30V DC	10A	7A	—

• CSA Ratings

Voltage	Resistive	General use
240V AC	10A	7A
120V AC	10A	7.5A
100V DC	—	0.5A
30V DC	10A	7.5A

• TÜV Ratings

240V AC	10A
30V DC	10A

AC: $\cos \phi = 1.0$, DC: L/R = 0 ms

Specifications

Contact Material	Silver	
Contact Resistance	*1	30 mΩ maximum
Minimum Applicable Load	24V DC, 10 mA; 5V DC, 20 mA (reference value)	
Operate Time	*2	25 ms maximum
Release Time	*2	25 ms maximum
Power Consumption (approx.)	AC: 3 VA (50 Hz), 2.5 VA (60 Hz) DC: 1.5W	
Insulation Resistance	100 MΩ minimum (500V DC megger)	
Dielectric Strength	Pin Terminal	Between live and dead parts: 1500V AC, 1 minute Between contact and coil: 1500V AC, 1 minute Between contacts of different poles: 1500V AC, 1 minute Between contacts of the same pole: 1000V AC, 1 minute
	Blade Terminal	Between live and dead parts: 2000V AC, 1 minute Between contact and coil: 2000V AC, 1 minute Between contacts of different poles: 2000V AC, 1 minute Between contacts of the same pole: 1000V AC, 1 minute
Operating Frequency	Electrical:	1800 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:	1000 m/s ²
	Operating extremes:	100 m/s ²
Mechanical Life	10,000,000 operations	
Electrical Life	200,000 operations (220V AC, 5A)	
Operating Temperature	*3	-25 to +40°C (no freezing)
Operating Humidity	5 to 85% RH (no condensation)	
Weight (approx.) (Basic type)	RR2P: 90g, RR3P/RR3PA: 96g, RR1BA/RR2BA/RR3B: 82g	

Note: Above values are initial values.

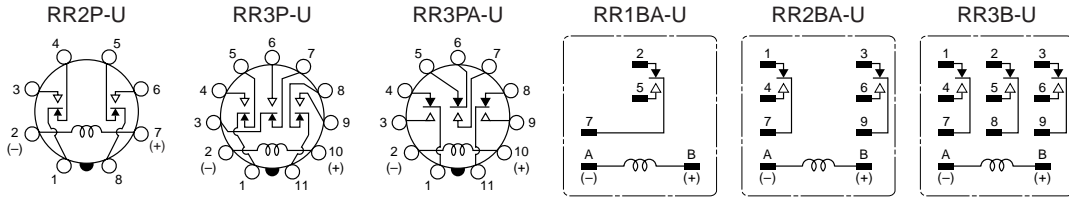
*1: Measured using 5V DC, 1A voltage drop method

*2: Measured at the rated voltage (at 20°C), excluding contact bouncing

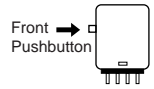
*3: For use under different temperature conditions, refer to Continuous Load Current vs. Operating Temperature Curve.

Internal Connection (Bottom View)

• Basic Type

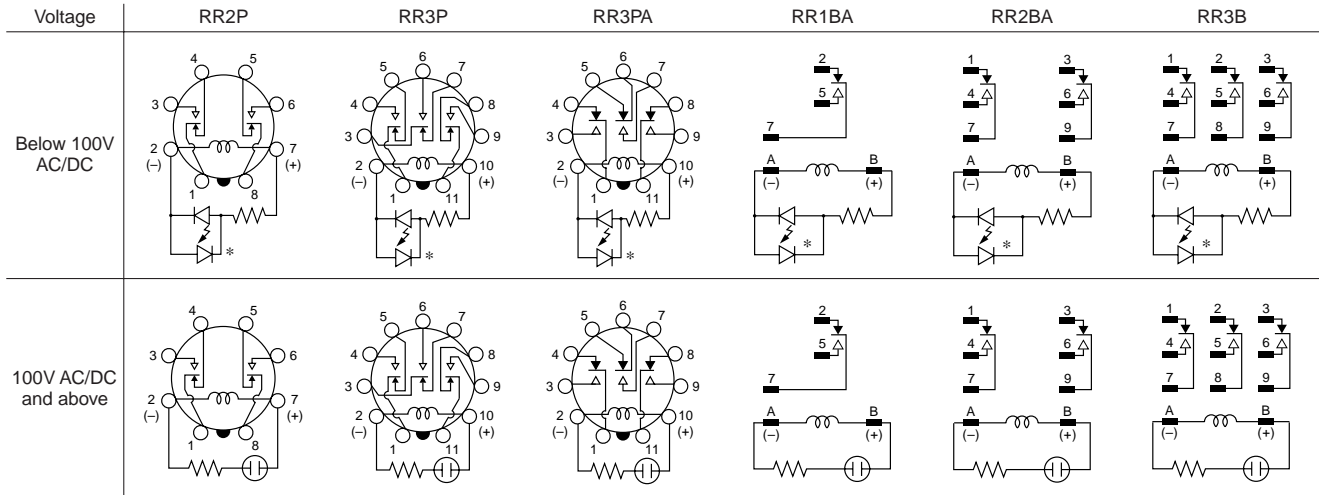


• With Check Button



Contacts can be operated by pressing the check button. Press the button quickly to prevent arcing.

• With Indicator (-UL type)

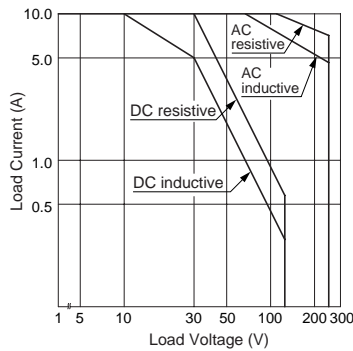


When the relay is energized, the indicator goes on.

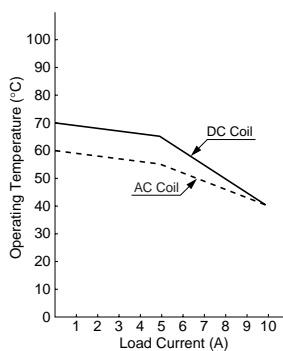
* The LED protection diode is not contained in relays for below 100V DC.

Characteristics (Reference Data)

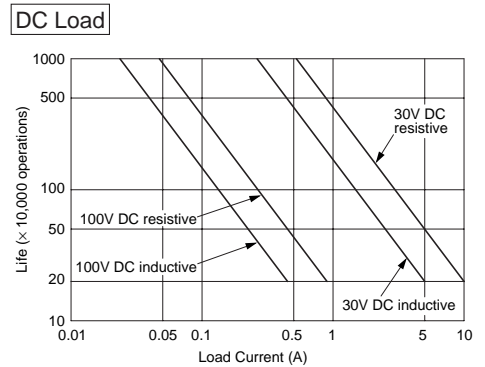
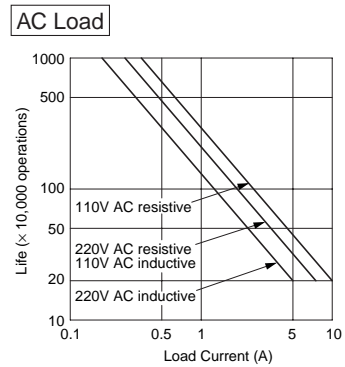
• Maximum Switching Capacity



• Continuous Load Current vs. Operating Temperature Curve (Basic Type, With Check Button, and Side Flange Type)



• Electrical Life Curve



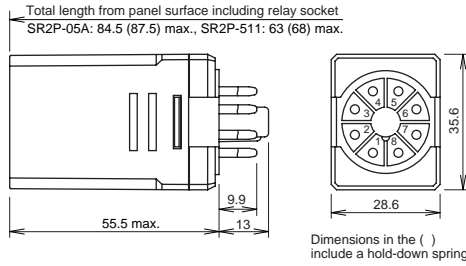
RR Series Power Relays

Dimensions

RR2P-U/RR2P-UL



(Photo: RR2P-U)



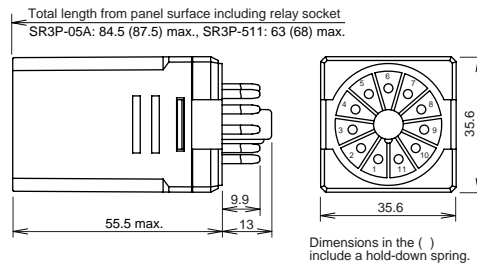
• Applicable Socket and Hold-down Spring

Socket		Type No.	Hold-down Spring
Mounting Style			
DIN Rail Mount Socket		SR2P-05A SR2P-05C SR2P-06A	SR2B-02F1 SFA-202
Panel Mount Socket	w/Solder Terminals	SR2P-511	SR3P-01F1
	w/Wire Wrap Terminals	SR2P-70	

RR3P-U/RR3P-UL/ RR3PA-U/RR3PA-UL



(Photo: RR3P-U)



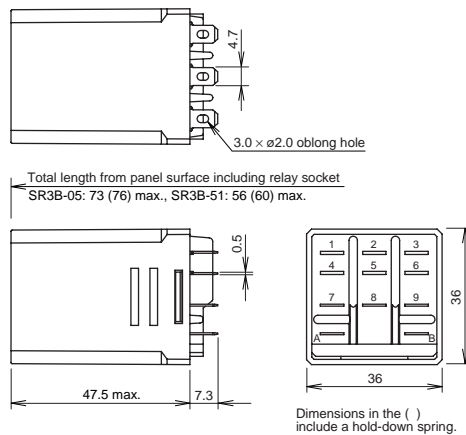
• Applicable Socket and Hold-down Spring

Socket		Type No.	Hold-down Spring
Mounting Style			
DIN Rail Mount Socket		SR3P-05A SR3P-05C SR3P-06A	SR3B-02F1 SFA-202
Panel Mount Socket	w/Solder Terminals	SR3P-511	SR3P-01F1
	w/Wire Wrap Terminals	SR3P-70	

RR1BA-U/RR1BA-UL/ RR2BA-U/RR2BA-UL/ RR3B-U/RR3B-UL



(Photo: RR3B-U)



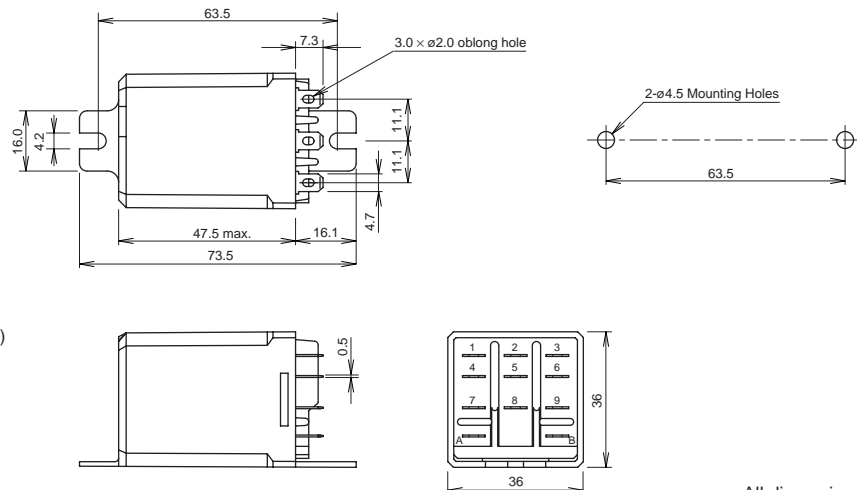
• Applicable Socket and Hold-down Spring

Socket		Type No.	Hold-down Spring
Mounting Style			
DIN Rail Mount Socket		SR3B-05	SR3B-02F1 SFA-202
Panel Mount Socket		SR3B-51	SR3B-02F1

RR1BA-US RR2BA-US RR3B-US



(Photo: RR3B-US)



All dimensions in mm.

